

# MODERN PACKAGING

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*Pulp wood is standing in North American forests to supply the country's needs for at least 100 years.*

## *Plight of Paper*

**T**he paper industry is in the midst of a business recession in the midst of a great war. It is confronted with a public that believes there is a definite paper shortage and its patriotic duty is to use as little as possible.

Nothing is further from fact.

There is no paper shortage in this country. There is no probability of a paper shortage in 1942. There has never been anything but a temporary shortage of any kind of paper, due to problems of maldistribution and hoarding caused by a mythical scare. The scare was created because somewhere along the line somebody forgot the variables that upset the best statistics. From all appearances the demand for paper may be less in 1942 than in 1941. Some mills are actually beg-

ging for orders and offering contracts at most attractive prices.

Modern Packaging makes the above statements on the basis of opinions gathered from all branches of the paper industry in an effort to present a true picture of where the country stands on the question of paper supply. The purpose is to clear up the many misunderstandings that have created a paper scare throughout the nation, and to point out just how freely available is this basic material which has some 15,000 known uses in today's military and civilian economy and which is one of the most logical substitutes for countless scarce materials, but has no substitute for itself.

Today's lull in the paper market got started last year. Official Washington, frightened by

the critical paper situation in England, put a staff of statisticians to work to figure requirements for the United States on a basis of wartime economy. Overlooking the fact that the American situation was in no way comparable to the British, they came back with an alarming report. They estimated a shortage of 33 per cent. The news spread like wildfire. Immediately a tidal wave of overbuying started all over the country and ran through 1941.

Consumers acquired excessive inventories. Salvage campaigns sprang up in every hamlet. Every citizen believed we would lose the war if he wasted a paper bag, or didn't have letters going out of his office typed on both sides. Patriotic housewives reluctantly cleared their attics of yellowed love-letters which they turned over to the junk man. Shoppers were willing to carry home articles without bags and cartons in response to "Never mind the wrapping." Direct mail advertising pieces were returned with curt comments about a waste of paper. Women went into stationery departments virtually demanding letterheads in a "dirty white war shade" even when advised that plenty of pure white paper was available. Consumers were embarrassed by make-shift containers (or lack of containers) furnished by stores. Executives of many businesses complained about individual copies of certain bulletins mailed to each of them in the same concern.

The whole situation got desperately out of hand. It was most unfortunate that the government's request to save waste paper was confused with the idea of a necessity of curtailing the use of new paper—a request that the government never really made in spite of the interpretations.

## WHY NO SHORTAGE

Now comes realization of what happened. The statisticians had taken normal requirement estimates and added to them the staggering amounts of paper which would be needed for military requirements. What is commonly known now is that they did not account for the dislocation of civilian production brought about by the increase of the military. Washington predicted that this year the country would need 26,000,000 tons of paper and paperboard. The paper industry produced 17,258,000 tons last year and met all requirements. The estimated additional requirements for the military were offset almost immediately by the corresponding decrease in the production of consumer goods. Naturally with such production cut off, there was a decrease in the amount of paper used by civilian industry.

Orders restricting the production of automobiles, for example, immediately reduced the use of paper by this industry for packing purposes, to say nothing of the reduced amount of paper used for consumer automobile advertising. During the two months of March and April this year, many products ordinarily packed in cartons were restricted. For example, razor blade production was curtailed to approximately 1940 production, which meant a 25 per cent change downward from 1941. Dwindling tea imports reduced tea consumption 50 per cent. Alcohol for the manufacture of toilet goods was reduced to 70 per cent of the quantity available for such merchandise in 1940, with the resultant decrease in the quantity of toilet goods to be packaged for the consumer market. Likewise, was the cutting down of production in all kinds of consumer goods, particularly heavy-duty household equipment, such as refrigerators, ranges, radios, with a consequent reduction in the use of paper for packing and advertising these products.

Because of these curtailments, there now exists an actual oversupply of paperboard for packaging. Board mills still have government orders and at no time during the paper scare has any government order gone unfilled, but mills that have been depending largely on civilian business are alarmed at the decline in orders. The huge cuts in board consumption for such products as radios, refrigerators, lighting fixtures, as well as the rationing of various foods, has hit board consumption hard. Even toys made from rubber and metal, now out of production, affect the paper industry which normally supplies millions of set-up boxes for these products.

One mill executive remarked ironically recently, "The box industry doesn't need ceilings, it needs a cellar!" He might have said, "The box industry doesn't need allocations, it needs allotments." Paperboard mills, today, are looking for orders and some are actually shutting down for lack of sufficient orders.

The board makers are proud of their record of deliveries during the 1941 flurry of paperboard buying. They admit some delays, but they claim that relatively few instances occurred where package users were short of their requirements. They maintained this record in spite of the fact that the government, scared by its own statistics, requested from the board industry 40 per cent of its production and tonnage. During normal times, the government does not use more than 5 per cent of production and tonnage. A recent Washington news release stated that 6 per cent of total mill production and tonnage is nearer government requirement today. An indication of how the whole situation stands is shown by the



Map shows forest regions of North America and western Europe. Legend: 1. Conifers (chief source of paper pulp). 2. Conifers and mixed hardwoods. 3. Temperate hardwoods. England has practically no pulp-wood producing forests; must obtain supply from Canada, the United States, the Scandinavian countries—a little from Africa. Shortage of ships curtailed supply from America; war cut off imports from Europe and Africa.

following figures. In the third week of May, board mills were operating at an average of 82 per cent of capacity. Up until the middle of April this year, production was sustained between 101 per cent to 103.8 per cent of capacity.

In the foregoing it was stated that the paper and paperboard industry met all requirements, military and civilian, with an annual production in 1941 of 17,258,000 tons. The best sources say that even with that production, there is surplus stock on hand. It is estimated that present mill capacity of some 800 mills in this country can be speeded up to production of 19,000,000 tons on a seven-day week basis if necessary. Based on all current estimates, allowing for the diversion of civilian industry to military pursuits, such production is claimed to be sufficient for every anticipated requirement.

## PULP SUPPLY

Furthermore, behind paper production in this country are the great natural resources of the American forests—resources which considered basically may have been overlooked in the whole irrational situation in this country with regard to a paper scare. Over here, we heard about the situation of paper shortages in England. The situations are in no way parallel. All of the pulp

for paper that goes to England must go in ship bottoms—from Canada or the United States, before the war from Norway and Sweden, some from Africa. After the invasion, the latter were cut off entirely and the shortage of ship bottoms immediately curtailed the supply from America.

No such situation exists here. Spruce, southern pine and hemlock, chiefly, are used for pulp to make paper, although paper can be made from almost any vegetable fibre. Despite the depletion of forests in the Northeast and Central sections of the country, there still remains plentiful timberland in the South and on the West Coast. Canada supplies us with the bulk of newsprint.

In a report of the Joint Committee on Forestry to the Congress, dated March 24, 1941, the stand of softwoods commonly used for pulp and paper manufacture as of 1938 was given as 1,585,024,000 cords. This is approximately a hundred times the amount of wood used by the paper industry last year. In other words, based on last year's consumption, enough wood of the kind suitable for all paper-making is standing in the country's forests today to last for at least a 100 years, if every tree never grew another inch.

Paper companies have been leaders in the movement for reforestation and have made such progress in this direction that future supplies of pulpwood appear assured. For example, Container Corp. of America gave away 1,000,000 seedling



pinus in Southern states early this year to encourage the planting of new forest reserves. The plan was accompanied by comprehensive educational programs for 4-H clubs, Scout organizations and farm bureaus.

Today, woodlands are "farmed" and trees are harvested like other crops. Fire protection has materially increased natural new growth and extensive planting has been undertaken in areas where previous cuttings have cleared the land.

## TRANSPORTATION

It's all right to say no paper shortage because we have sufficient pulp resources and sufficient mill capacity, some argue, but what about the transportation problem? How are we going to get the paper after it is made?

The solution to this rests with the program of careful planning and coordination between the Office of Defense Transportation and the Assn. of American Railroads.

American railroad transportation has been closely coordinated and is working as one huge continent-wide transportation plant, united to supply the efficient mass transportation that is vital to victory.

Joseph B. Eastman, director of the Office of Defense Transportation, has stressed three points to enable carriers to make the best possible use of their equipment:

1. Quick loading and unloading of cars have the effect of adding thousands of cars to the total supply.

2. The heavier the cars are loaded the more work they can do.

3. Freight traffic is irregular through the year and normally rises to a peak in the month of October. It is at that time the danger of shortage and congestion is greatest. The more that peak can be cut down and the valley filled, the more work the cars and locomotives can do.

The October peak hazard can be safely leveled off, the ODT believes, if companies take delivery of necessary raw materials at plant and ship finished product to consuming centers in the off season traffic as far as plant storage space and consumer center warehousing will allow.

Apart from higher transportation costs, rail transportation facilities are claimed to continue quite normally. Last year about 4,000,000 freight cars were required to move the products of the pulp and paper industry, about 10 per cent of total car loadings. Tighter packing through standardization of paper products and group allocations are now making two cars transport the previous volume of three.

Receivers who hold cars for excessive lengths of time may expect an embargo from the government that makes it impossible for them to secure other shipments until the detained cars are released. Freight cars are not wheeled storehouses. Their essential business is transportation, the movement of commodities from one place to another. More than ever before, it is vital that they be used for the purpose for which they are intended and traffic managers in the paper industry are doing their utmost to cooperate with such procedure. Cars are not to be held more than 48 hours and most of them are being loaded and unloaded within 24 hours.

The American railroads are counting on freight trains to chalk up the greatest transportation performance in their history. Their facilities have been greatly bettered through the broad program of physical improvement undertaken 20 years ago. The average freight train on the road today turns out more than twice as much transportation per hour as the average train during the first World War; locomotive pulling power has been increased 43 per cent; average freight train speed, 45 per cent; average freight car capacity, from 42 tons to 50 tons; average freight train run, almost doubled.

The government, the railroads and the shippers have profited from the lesson of the so-called car shortage in the first World War, when thousands of cars at a time stood under load all over the country not turning a wheel, when manufacturers got more materials than their plants had room to receive, and when freight movement became so desperately clogged that the government finally took over.

Since that time the Assn. of American Railroads has come into being. There is a single central control of shipping priorities. Shippers are organized in regional groups for cooperation with the roads in regulating car demands. Defense manufacture is not concentrated as it was before in one part of the country. Everything is planned to allay confusion. Some 15,200 freight trains are in daily operation and, according to the paper manufacturers, an important factor contributing to the stretching of freight car space in this war is the increased use of paper packaging.

## LABOR BOTTLENECK

Labor shortage could cause a serious drawback in the production of paper. There is a possibility that unskilled labor may be attracted away from paper manufacture to war jobs where the pay is apt to be higher and where there is some chance



of draft deferment. This is particularly likely in the case of the men who work in the woods. In the Northwest, many have been reported to be going to jobs in neighboring airplane plants. Once this labor is lost, it would be difficult to lure it back for the duration. If any such situation became acute, however, in any line of industry, the government might freeze labor to assure continuity of necessary production operations.

In the manufacture of a ton of paper, an average of 20 man-hours is needed to cut and prepare the necessary pulp wood; 10 more man-hours are used in the manufacture of the pulp; 18 man-hours to convert the pulp into paper. This adds to a total of 48 man-hours. Five to 20 more hours are needed to convert the ton of paper, depending on the type of product that is to be fabricated, into finished articles ready for delivery to the ultimate consumer.

Particularly in conversion plants, female labor can be substituted for male. In bag and carton factories, two-thirds of the employees consist of women. This same figure applies to many converters, box and label houses. In the manufacture of paper bags, 73 per cent of the labor is semi-skilled or unskilled. Forty-five per cent is female labor and only 8 per cent skilled male. Such fac-

tors make a minimum drain on skilled labor, so precious in these times when all skilled labor resources are essential in the all-out war effort.

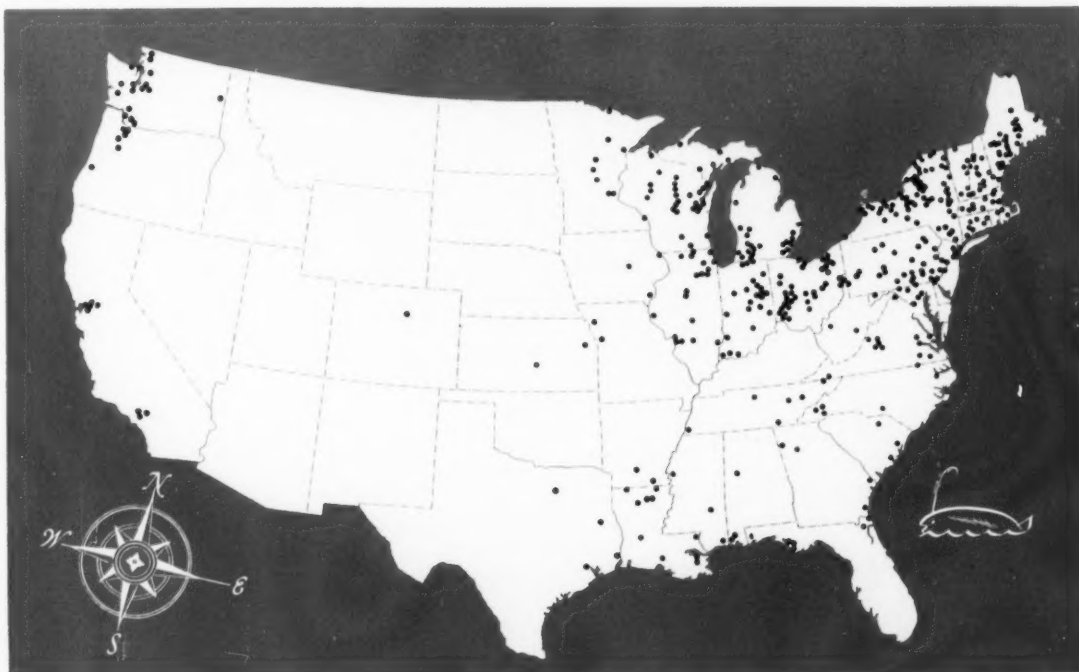
## ELECTRIC POWER

Paper mills are assured adequate power for their operation unless there is a serious shortage of electric power due to any of the following causes: drastic drop in rainfall affecting hydro-electric generation; shortage of coal supplies to central steam generating stations due to transportation bottlenecks or actual shortage of generating capacity generally due to the demands of a war economy.

Interconnected power systems, which are able to transfer surplus power quickly from one section of these systems where it is not needed to places where the demand requires it, will probably avert regional pinches.

Many mills generate their own power. In these cases, the problem is a matter of adequate fuel supply which to date has been no obstacle and will not be one unless transportation problems become serious with the progress of the war

*In the United States there are approximately 800 pulp and paper producing mills. This map gives an idea of their approximate location throughout the country. Data are based on statistical information furnished through courtesy of the Paper Mill News.*



## WASHINGTON SITUATION

Last year when the Pulp and Paper Branch of OPM predicted a serious paper shortage, a plan of cooperation was suggested to the paper industry. By such planning, it was believed that severe government controls which were beginning to hit other materials—aluminum, tin, copper, lead and other metals—could be avoided.

Leaders of the industry, however, were skeptical of such a plan; they felt that they could get their own house in order without the help of government. This was done and might have been all right in normal times, but both sides of the fence are beginning to see that this was not the wise move under a war economy. In fact, it has actually left the paper industry out on a limb without sufficient defense rating.

It was not without its good effect because it speeded up the filling of government orders, standardization of products, elimination of wasteful practices which made existing production stretch over all essential civilian uses. Its disadvantage was that it succeeded in keeping paper off the critical list and away from priority classification and therefore left paper without any "defense status" except for about 2 per cent of total production which was ordered directly by the government.

Under the definition of a defense order as given in a priorities regulation, paper failed to classify in all of those cases where paper was ordered by a government supplier but not by the government itself. For example, a carton intended to contain an airplane propeller was not given a defense rating because, while the airplane propeller was manufactured under a government order, the order for the carton was placed by the manufacturer of the propeller.

Recently, encouraging indications show that Washington may soon recognize the fact that the paper industry deserves a much higher "defense" classification than it officially receives under existing definitions, and the industry hopes that this recognition will take official form in the near future. Another reason why the paper producing industry would like greater recognition as an essential war industry is with regard to its status in obtaining critical materials for repairs and equipment. No new parts or new machinery can be obtained today without priority rating.

The manufacture of pulp, paper and paper-board involves continuous and involved physical and chemical changes. Interruptions beyond those of short duration in any single step of the manufacturing processes immediately affect the production of the entire plant.

The present system of priority control on criti-

cal metals, leaders claim, has already caused lost time due to inability of the mills to obtain materials for replacements or repairs and long delays in obtaining individual priority ratings on each single item of material equipment. Lack of one item, such as a stainless steel plate or gear, normally inconsequential, may close down a mill.

Whenever and wherever possible, substitutes have been used, but continuous operation and the corrosive and erosive nature of many of the pulp and paper making processes make substitution impractical in some instances. The present system of priority ratings on individual items or repair parts and equipment, it is claimed, can only result in a curtailment of production at a time when it is needed badly.

## COOPERATION

Along with other American businesses, the paper and pulp industry took steps to cooperate in the war program from the start. In 1940 the paper industry produced 14,500,000 tons of product. The government asked for a substantial increase in 1941 and the paper industry responded by making a new all-time record of 17,258,000 tons—an increase of 2,758,000 tons or approximately 20 per cent.

The whole industry is geared to take care of war production first. A full quota of bids on government orders is always offered and when one mill encounters difficulties in executing an order, arrangements are quickly consummated for its prompt completion by some other mill.

A vast new pioneering cycle of revolutionary developments is under way to produce new paper products to take the place of other materials restricted by the war program. This is rapidly converting manufacturing operations to produce papers with strong structural and protective qualities for this period when utility means everything. Every effort is being made to maintain quality in the face of limitations, priorities and allocations. Top executives have donated generously of their time wherever their opinions have been sought. Technical men have been loaned on company time to assist Washington officials on paper problems. A valuable reservoir of technical advisers on all phases of pulp and paper manufacturing assures authoritative information to the government.

A simplification and standardization program has been adopted to increase efficiency in manufacturing operations. Sizes, weights and colors of all grades of paper have been simplified. Kraft papers, for instance, are now made up in six stand-

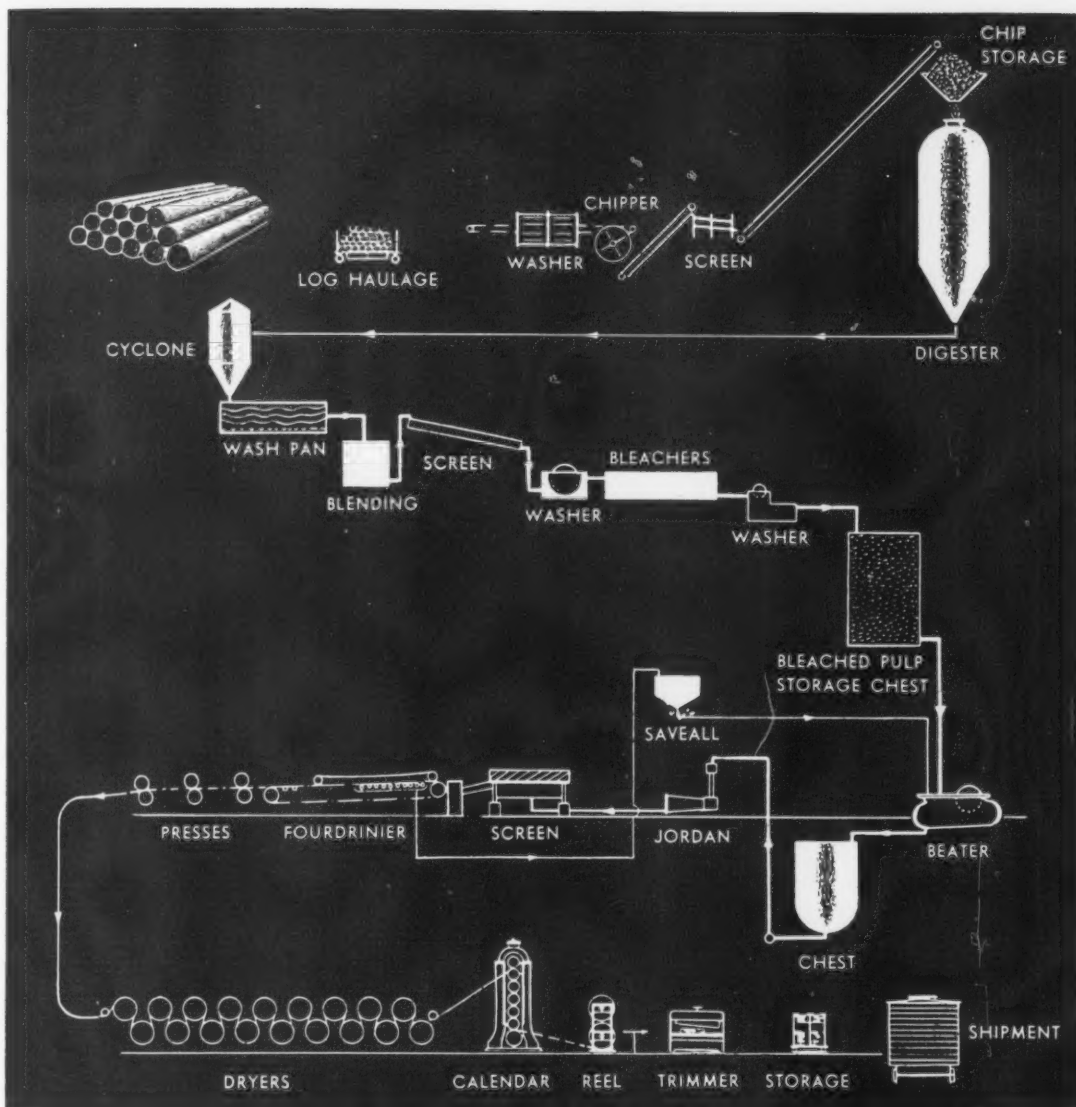


Diagram shows the various steps in the process of making paper from the time the logs go to the mill until the finished paper is ready for shipment.

## LEADERS OF THE PAPER INDUSTRY SAY:

**17,258,000** tons of paper produced last year were more than enough to meet the country's entire requirements—military and civilian.

**19,000,000** tons can be produced annually with existing mill capacity if production is speeded up on a seven-day week basis—enough to meet every anticipated requirement this year.

**15,000** uses for paper are known in today's civilian and military economy.





*Pulp is prepared in huge beaters.*

ard weights, formerly in 30. Book papers now come in seven colors, formerly in 13. Sizes of paper bags have been reduced from 297 to 179. Many food carton manufacturers have eliminated quarter and half-pound sizes. It is estimated that 80 per cent of the paper business is done on 20 per cent of the items, hence the simplification program has been most effective in improving production efficiency.

The paper industry is helping in the conservation of metals in two ways: 1. By developing many paper containers which are taking the place of metal ones, thereby releasing that much more metal for war purposes. 2. By conserving the use of metal in paper mills and converting plants. Equipment is being given extra care to avoid use of metal for replacement and less critical metals are being substituted for more critical ones wherever possible.

Minimum use of chemicals on critical lists is being made and amounts formerly used as standard in former instances have been reduced. Use of chlorine in the manufacture of bleached sulphite and bleached kraft paper has been reduced voluntarily more than 25 per cent of the former usage of this chemical.

Skilled machinists are at a premium and pulp and paper producers have organized comprehensive programs in mills for the training of machine operators. Those with aptitude for this work are selected from general employees of the mills and given opportunity for this training so that they will be available should increased war production demand their services.

It is estimated that there are about 2,000 technical men engaged in research development of

paper and paper products for which the industry spends annually several million dollars. Expansion of the paper business is largely due to research efforts, which have reduced paper costs and increased the number of uses.

Once mill men tested the tensile strength of a sheet of paper by chewing it and then poking a finger through it. No such unscientific methods are used today. Definite standards of testing have been established by laboratory procedure for almost every known property of paper. Modern Packaging has published a series of articles describing a number of such tests as developed by the American Society for Testing Materials. One of these articles appears elsewhere in this issue.

From the research laboratories are coming the new protective papers, the substitute containers, the new coatings and closure methods which are enabling paper to take the place of other materials in hundreds of packaging situations.

## PAPERS AVAILABLE

The following list will give users of paper and paper products a brief description of the present situation with regard to these supplies and the current prospects of obtaining them, according to best advice from paper manufacturers.

**BOOK PAPERS:** Now available in unlimited supply, both coated and uncoated. A pronounced dislocation was caused during the current scare through falling off of their use in direct mail advertising, discontinuance of catalogs, curtailment of magazines. Mills in this field in May were running about 64 per cent of capacity.

**CELLOPHANE:** This material is mentioned here because, although not paper, it is made from wood pulp and is widely used for package wrapping. Cellophane has been restricted primarily to the packaging of drugs, foods and tobacco. However, it is reported that there is no critical shortage of cellophane. Yardage has been increased for the year with no advance in price. So far in 1942 all necessary requirements have been taken care of. Cellophane is available for the replacement of more critical packaging materials such as rubber hydrochloride sheeting, metal foil, etc. In the case of cigarettes, the government gave manufacturers the choice of using foil or cellophane. Cellophane was selected.

**ENVELOPES:** A plentiful supply of envelopes and merchandise packets is available in all grades of paper. Orders are fewer this year and it is believed that production will be less than in 1941

when the volume was in excess of 30 billion envelopes. Direct mail advertisers, large users of envelopes, have cut their mailings noticeably and this has taken a big bite out of the usual envelope business. The government, to a certain extent, is filling in the gaps with larger orders, but there is definitely no shortage for the civilian consumer. Envelopes with glassine windows are available.

**DECORATIVE PAPERS:** No need to curtail gift wraps because of a shortage of decorative papers. At the present time ample supplies are on hand. About 70 per cent of the lines remain intact. Metallic inks are out, but colors are as gay as ever. Design trends are toward the romantic, floral and Victorian patterns, with also a pronounced accentuation of conventional symbols. When critical materials are not used in the decoration of these papers, curtailment of their production is not in order and users should be encouraged to buy them, because it is not unpatriotic or costly to do so. There is some demand for decorative papers from foreign countries due to the absence of French and German manufacture in this field. Considerable shipments are being made to South America.

**GLASSINE:** Glassine papers are available to any manufacturer whose packaging problems require essential protective characteristics, such as grease and moisture resistance, which can be achieved by waxed or lacquered glassine. Glassine is also available in cases where it is used as a substitute for foil or cellophane for protective purposes, but the use of glassine for purely decorative purposes should be discouraged.

Glassine production is running as high as 120 per cent of what is considered normal capacity to supply increased demands. About 84 per cent of its use is in the food field; the remainder is used in the drug and chemical packaging fields. Glassine is being used more and more widely in the war program for wrapping precision instruments and surgical supplies.

**KRAFT PAPER:** Enough kraft pulp, kraft board and kraft paper is now on hand to supply what has thus far been maximum demand. Kraft paper, which was so tight last fall, is now being offered quite freely. Annual production of kraft paper amounts to 1,600,000 tons, which is in excess of all estimated requirements. Kraft is a Swedish word meaning strong; sulphate is the technical name of this paper, which is the strongest that can be made from wood fibre. Hence kraft paper products can be expected to carry the burden of packaging and shipping container requirements in many cases where substitutes must be found

for critical materials such as metals, fabrics, plastics and rubber.

From every standpoint—strength, economy, saving of shipping space and weight, as well as availability—kraft is the logical material to bear the shipping load for the duration. Kraft might be termed the “truck” of the entire paper family and will make deliveries of a major portion of the war materials. Every indication points to the fact that an ample production of kraft pulp, board and paper can carry this load without curtailing essential civilian uses.

**MULTIWALL BAGS:** These heavy-duty containers are the work horses of today's packaging industry. Multiwall bags are made of several plies of kraft papers, usually four or five, with an aggregate basis weight averaging about 200 lbs.

These bags were designed originally for the transportation of cement, lime, plaster and other rock products. Now, due to a shortage of burlap and other fabric bags, they are used for a wide range of essential products.

If geared to an all-out production schedule—24 hours a day, seven days a week—manufacturers say they are capable of a production of these bags five times greater than they are now producing. Present estimates are for a production of 850,000,000 multiwall bags this year. Due to the shortage of burlap, which can no longer be imported from the Far East, the government is more and more dependent upon the multiwall bag for transporting both critical war and civilian items. Lend-lease products are being sent overseas packed in multiwall bags interleaved with water-proofed asphalt-laminated sheets.

The multiwall bag probably offers one of the

*Rewinding paper on huge rollers.*



greatest means of any item in the paper family for saving both critical materials and shipping space. Production will be expanded to take care of requirements.

**PAPER BAGS:** In spite of all talk of shortages of the common brown paper grocery bag and the demands on this product today, there appears to be no danger of a shortage of this type of paper supply. Curtailment of rubber and gasoline, limitation of metal cans and their complete elimination in some fields, as well as the rationing of some products, such as sugar requiring re-packing in retail stores, all contribute to a definite increase in cash-and-carry purchasing and the need of paper bags and sacks to carry these purchases.

**PAPERBOARD:** As a result of the widespread waste paper campaign and the availability of kraft board, there is actually a surplus of this material as is shown elsewhere in this article. Paperboard consists of 85 per cent waste material and the remainder new material. Since the salvage programs were put into effect, so much waste paper was collected that the government is now actually asking for a curtailment of collections. Since the kraft situation is also eased, there are plenty raw materials on hand for supplying adequate quantities of paperboard for all needs.

**NEWSPRINT:** A definite slackening of demand and marked oversupply of newsprint is reported. Many mills are operating only three days a week. In April, newsprint production in Canada, which supplies the United States with much of this paper, was down 75 per cent of capacity, lowest operating rate since February 1941, when it stood at 72.9 per cent. Causes for the present newsprint situation were the large reserve stocks built up by publishers, the threat of reduced sizes of newspapers and fewer editions, and the reduction of advertising. Further surpluses are also being created by the shortage of cargo space for exports to South America, England, Australia and New Zealand, all of which countries were ordinarily large users.

## **PAPER AS A SUBSTITUTE**

The situation affecting raw material for packaging media is becoming more critical every day. Substitutes must be found for all types of metal used in packaging—cans, closures, foils. Rubber is no longer available for protective films. Jute, burlap and cotton are scarce for the making of fabrics. Paper and paper products are the natural substitutes for these materials because of their availability, versatility and economy.

Paper mills and converters have gone a long way, in cooperation with manufacturers of packaged goods, to devise new package supplies to replace those impossible to obtain due to the upheaval of the war situation. In fact, many leaders in the paper industry believe the present emergency may be the time of all times to develop new containers which will bear the load as substitutes for the duration, but also will be used for packages that will never be returned to formerly used materials.

One important fact has been established. It is the weight and space-saving advantage of paper packaging and shipping. For example, one new flexible material made from laminated sheets of paper and other protective films to replace cans was estimated to save shipping space at a rate of 77 to 1 when empty, in comparison with a set-up container.

Great advances have already been made in the development of liquid- and semi-liquid holding containers made of paper with special coatings and linings of glassine and specially developed cellophane. Great advances have been made in the use of special adhesives to give these packages gas- and moisture-proof qualities at the seal. Many of these paper containers have heat-sealing properties. Hermetically sealed containers of this type are also in process of development with laminations and linings of films which do not use rubber.

Cartons and bags fitted with glassine and cellophane liners, heat-sealed and airtight, are taking the place of metal containers in many instances for dry food products such as coffee and dehydrated foods, which need careful protection to retain flavor and essential oils, and to keep out moisture.

Many paper converters are working to develop closures from hard-pressed paper to replace metal, plastics and cork. Others have paper compacts and lipsticks already on the market for the cosmetic trade. Adopted by some of the country's most important cosmetic manufacturers, these may already be seen on beauty counters. The lipsticks have the same swivel construction as their metal ancestors.

Trial orders of all types are being taken to paper converters and subjected to intensive research. Every manufacturer who has a packaging problem, due to the critical situation of materials previously used, is welcomed by paper product manufacturers, who are doing their best to meet his requirements with a paper substitute. Just the other day a maker of dental floss was looking around for a substitute for a tiny metal pocket reel container. He was referred to the companies who have made paper compacts and lipsticks with the possibility of their solving his problem. These



companies could do so easily if they could find a way to provide a cutting edge on a small paper reel to sever desired lengths of the floss.

In a war economy, "business as usual" is out, of course. Many non-essential and luxury products have been restricted and many more will be limited. However, production of many items considered essential to civilian economy will be continued and for them the problem of packaging with available materials will remain.

Manufacturers of products whose packages are not yet on critical lists will do well to plan ahead for further emergencies that may arise. Such planning may take them through a transition with a minimum loss of sales and prestige. Through careful collaboration with designers and mill experts, effective containers of paper may be ready when the need arises. Designers and package engineers are optimistic about new packaging forms from paper and have created many without loss of character or trade identity. A good trade mark design, they say, retains its individuality under all circumstances. One leading designer feels that paper container design should follow the dictates of this medium and that new packages from it should not be imitations of old packages from other materials. He also believes the most successful packages of paper will result from joint efforts of designer and paper specialist. In this

way, full technical developments may be utilized.

Another designer believes the current situation of paper packaging will call into play greater ingenuity of packaging construction. "This is a time for packaging engineers and not arty designers," he stated. "The packaging industry must design today for consumption instead of shelf appearance. Packages must be stronger and simpler. Paper rightly used can have great structural strength as well as tactile and visual attractiveness."

## CONSUMER ATTITUDE

Makers of branded merchandise need have no great fear of losing consumer acceptance for the duration. In the first place, changes will be accepted by consumers in a spirit of patriotism. Through the public press and government information services, they know such changes in packaging materials are necessary and will accept them gladly as their part in helping to win the war. If the packages are attractive and structurally good, the public will even welcome a change enthusiastically. Secondly, if the shortage of consumer goods becomes acute and rationing increases, there will be no worry over the pack-

*Many foods formerly packed in tin may soon be seen on the market in paper containers like these with protective linings and liners of cellophane.*

COURTESY DU PONT CO.



ages. Everybody will be glad to take anything he can get. This is the situation which manufacturers and retailers have experienced in England. Cigarettes, for example, are so short that people are glad to buy them, whatever brand, and without any package if they can only get them.

However, in this country, where practically all brands of products are still available, the wise manufacturer will inform the public of any changes in packaging. This will not only help to keep his brand before the public in its new dress, but will create good will for him because he is assuming his responsibility of taking his part in the war conservation program. Announcements of changes can be conveyed through enclosures, institutional advertisements and posters. They offer unusual opportunities for re-dramatizing a product and a chance for timely copy themes.

## PICKING UP THE PIECES

The whole paper scare was unfortunate. It was nobody's fault. It was born of a patriotic fervor on all sides—government, paper industry and public—to win the war at any cost. Because of dislocated economy, it happened before anyone knew it was happening. But much harm has been done and there is need for the same patriotic fervor to pick up the pieces and get the whole system of paper supply and demand in gear with the emergency.

All concerned realize three things must be done:

1. The patriotic citizens who cooperated so whole-

*Paper bags used to protect precision instruments from dust on the manufacturing lines of a war industry.*



2. Those who used the paper shortage rumor to turn many packaging and paper costs into a profit at the expense of their customers must be made to feel, through public opinion, that such procedure cannot continue under a mask of patriotism.
3. The fact that ample supplies of paper are available should not be interpreted to mean that the supply is limitless and, therefore, the country can go hog wild in using it.

Paperboard consists of 85 per cent waste material; 15 per cent new. Regularly 72 per cent of the paper tonnage that goes to the public is destroyed. Only 28 per cent gets back to the mills in the form of waste.

When the government became alarmed about a possible shortage of waste paper last year to supply the paperboard industry, which would be called on to supply millions of cardboard containers, it was estimated that war needs would require 50 per cent more waste in 1942 than was accumulated in 1941. Normal activity of the paperboard industry is between six and seven million tons, but the government estimated that 11,000,000 to 12,000,000 tons would be required for the country's needs in view of demands of a national emergency.

Thus, something drastic had to be done to step up waste paper reclamation. A salvage campaign was organized in September 1941 by more than 50 of the nation's leading paper mills. It was paid for directly by the industry with the government's blessing. It cost to date three-quarters of a million dollars. It was estimated the average family could save a pound of waste paper a day.

## PATRIOTIC CITIZENS

The public was bombarded with appeals through newspapers, radio, billboards and trade publications. Response from a public eager to do something was like lightning. Boy Scouts, Girl Scouts, Salvation Army, all types of social agencies solicited homes and offices for waste paper. Banks disgorged old stocks and bonds. Newspapers with datelines 30 years back turned up. Lily Pons donated 20,000 fan letters.

In their enthusiasm, citizens went far beyond the requirements of the situation; started cutting down on the consumption of new paper. Reclamation of waste paper doubled all previous records and hit an all-time high in January. Then in February orders for paperboard began to drop off at an alarming rate. Marked overbuying in



*Corrugated cartons are carrying enormous quantities of war materials.*

1941 and the closing down of many lines of consumer goods brought a lull in the consumption of paperboard. Unfilled paperboard orders at this time are 100,000 tons less than a year ago.

Yet the accumulation of waste paper continues unabated. Mills are chock-full of it and crying, "Stop, stop!" In many places it is tying up railroad cars. A member of WPB recently said the salvage campaign is producing some 9,000 tons per week in excess of mill consumption. On May 19, Lessing J. Rosenwald, chief of WPB's Bureau of Industrial Conservation, said, "Unfortunately there is a limit to the amount of waste paper that can be stored. We consider it unadvisable to urge the collection of waste paper at points far distant from the mills when the railroads are straining to their utmost to carry the load."

Washington is trying to work out some way to use the huge stores of waste paper, yet at the same time the government and the industry must also tell the public in a way that will not dampen their enthusiasm that they don't want any more waste paper for the time being. This program is under way in something of a left-handed way—"A thank you for your efforts, but we would rather have you save critical metals now."

Handling such situations in a wartime program is ticklish business, but it is one of the things that must be done right if national morale is to be maintained.

Advertisers, too, have entered into the patriotic conservation programs with a consequent effect on the recession in the paper industry. One prominent broadcasting system with a reputation for brilliant promotional pieces has shifted to the

most matter-of-fact presentations to cooperate with the cause.

Many other advertisers have deemed it indiscreet to go against the grain of public opinion by making lavish gestures in print. One advertiser was so sensitive he requested his engraver not to send proofs on coated stock. Many concerns have curtailed or abandoned their use of window and counter displays because such were a waste of essential war materials. In many instances the size of displays has been reduced to cut down consumption of paperboard. Displays in stores are being kept 50 per cent longer than usual. The poster field has also been hard hit.

The display producers are starving. Many semi-idle plants are trying to fill the gaps by taking orders for the printing of picture books, prints and greeting cards.

From the standpoint of paper supply, there is no need for the curtailment of materials for advertising literature or other types of promotional and display material.

## ON THE BAND-WAGON

It is perhaps only natural that many users of paper are taking advantage of the paper shortage rumor to lower or eliminate packaging costs. Paper makers and converters agree that there are many savings that can be made in this way, but that in the present situation many such cases have been instances of profit taking at the expense of customers who feel they should cooperate in the saving of paper.





*Multiwall bags are replacing burlap and other fabrics.*

Wrapping paper, bags and boxes are being stinted to such a point that orders on these items have fallen off heavily. Grocery stores have been reluctant to put purchases in adequate bags, often overloading them to a point where loss has been sustained by the customer. Customers have been encouraged to return grocery bags for re-use, a practice claimed by some to be unsanitary. Food in second-hand bags has been said to have caused certain diseases in some homes. Already a few municipal and state health authorities have taken action on such situations.

Some dry cleaners have eliminated paper bags to protect newly cleaned clothing. Complaints have been received that clothes delivered in this manner arrived spotted and soiled, and had to be returned. This is wasteful since it involves an extra use of chemicals to do the job over and an extra use of tires to redeliver the garments after they have been recleaned.

Gift boxes are supposed to be fabulously rare and command a premium. If a customer insists on having one, he must pay a fee for it. Yet these boxes are among the most freely available types of paper containers, according to makers of them. In practically all stores, customers asking for items to be packed in boxes are being told by salespeople, "I'm sorry, madam, but we're not furnishing boxes due to the war. However, if you must have one, there will be a slight charge."

"Excuse-it-please-this-is-for-conservation" will not always hold water if the American public learns that actually there is really no paper shortage. Leaders in the paper industry are already making a check of the cost of merchandise re-

jections made by customers because items arrived in a damaged condition due to inadequate protective wrapping. Many such purchases have been found to contain irreplaceable materials such as kitchenware, flat irons and similar objects not now being made for civilian consumers.

It is one thing to say there is no paper shortage. It is another to start out with this assumption and let the country use too much paper. If the whole paper production program is going to carry us through the war comfortably, there must be a sane use of this valuable material. Mills can't be built overnight and while there is a plentiful supply now, this advantage should not be taken as license to use paper needlessly. All the paper industry wants is a saner attitude all around, without the fetish of an irrational shortage scare. If this can be achieved, it is believed that the present recession will be eliminated without further upsetting the apple cart.

## PAPER IN MODERN LIVING

The American pulp and paper industry ranks sixth largest in the United States. The value of physical plants and forests is estimated at \$2,500,000,000. Annual production totals \$1,500,000,000. This production, however, is only the beginning of a long chain of manufactures basically dependent upon pulp, paper and paper-board. Some 800 mills are scattered throughout 37 states and 63 per cent are located in communities with less than 25,000 population. In many communities the mills are the chief, if not the only source of industrial employment. One and a half million workers are employed and their families are directly dependent upon pulp and paper production for a livelihood.

The United States normally produces 50 per cent of the entire paper production of the world. It consumes, with paper imports, nearly 60 per cent of the world's production of paper and paper-board.

The paper industry uses 600,000 tons of salt, 350,000 tons of sulphur, 250,000 tons of steel, 150,000 tons of iron, 25,000 tons of copper. It has a billion dollar payroll.

It would be difficult to imagine a modern world without paper. From the time you get up in the morning, eat your breakfast from paper cartons and wrappings, read the morning newspaper, until you go to bed at night, you have been in almost constant contact with paper. From the colored sheets used in kindergarten to high school diplomas, paper is the number one essential of education. It is the working tool and the storehouse of

knowledge. Almost 2,000,000 tons of book papers and 600,000 tons of writing papers were made in the United States in 1941.

Waxed kraft, parchment, grease-proof, glassine and, now especially, coated utility papers keep foodstuffs fresh and appetizing. American foodstuffs are the best protected in the world. Parchment paper keeps butter fresh and paper cartons give it a convenient package. Eggs are kept from breaking in paper containers. Even milk is given protection in modern paper containers. Vegetables like celery, broccoli, asparagus, lettuce, spinach and carrots go to market from distant farms, packed with ice in crates that are lined with water-resisting paper. Paper not only figures in the economics of modern distribution, but keeps foods from contamination.

Paper makes possible the printing of 14,000 newspapers in the United States and 20,000 magazines and periodicals. In 1940, more than 200,000,000 books of all kinds were published in this country.

Per capita consumption of paper and paper board in this country at the present time is 300 lbs. and informed sources estimate this figure will increase in the next decade. In 1913, per capita consumption was about 65 lbs.; in 1927, 136 lbs. This tremendous increase is due in part to the low cost of raw material from which paper is made and the mass-production methods by which it can be produced and converted.

## PAPER IN WAR EFFORT

So vital is paper in waging war, it is estimated that the present struggle would be forced to stop within 60 days if the supply of pulp and its many products were cut off. War requirements, direct or indirect, are claiming 52 per cent of the total production of container board, 43 per cent of paperboard and 80 per cent of building paper. It is estimated that the steel industry this year will use up 60,000 tons of kraft paper to interleave armor plate and cold rolled steel. Army ordnance plants require 30,000 tons of paperboard each month for packaging the shells they turn out. An entire carload of blueprint paper is required to design one battleship.

To keep soldiers supplied with milk, the Army Quartermaster Corps needs 1,000,000 paper milk containers a day. This year the government needs 1,250,000,000 envelopes. Approximately 75 per cent of the supply of sensitized papers, such as blueprints, is being consumed for direct defense needs. Writing papers from the finest rag content bonds to mimeograph papers are being used in in-

creasing quantities by the government. More than 25 per cent of the capacity of the rag content writing paper industry is being purchased by the government, chiefly for permanent records. Paper is required for maps for military strategy. Without paper, propaganda leaflets would be impossible. Tissue and absorbent papers used for sanitation help to keep our armed forces the healthiest in the world. Just the small item of targets annually requires 11,000 tons of paper.

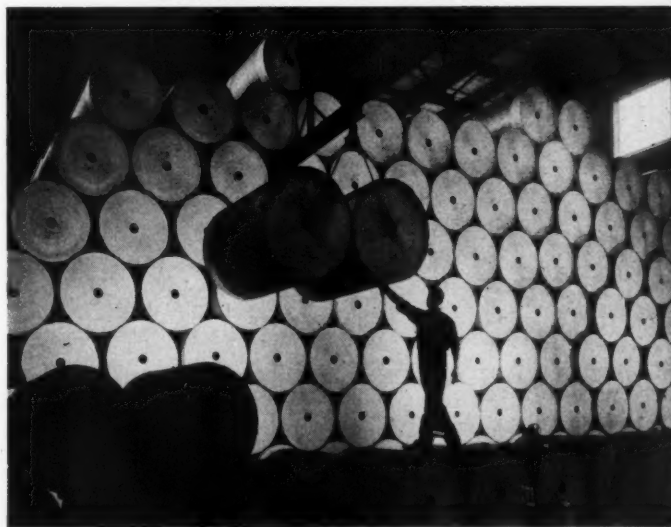
Current annual requirements for book and printing papers for army and navy manuals and other informational material is upwards of 200,000 tons. Paper cartons, paper napkins, paper cups, paper plates, paper spoons are used by the tens of millions by the army commissary. Field lunches in training camps are wrapped in paper and put in paper bags.

Waterproof papers are used in the construction of cantonments, bomber plants and runways for landing fields, as well as for overseas shipments of trucks, tanks, jeep cars and other fighting equipment. Sulphite wrapping papers, glassine and grease-proof papers, vegetable parchment and kraft papers are used widely for wrapping foods used by the military.

Spare parts are put in paper bags and fastened securely to airplane assemblies at the exact points where they will be needed when the plane is re-assembled for actual service in some distant place. Insecticides and fertilizers used in agricultural work are packed and shipped in heavy multiwall bags. Heavy multiwall bags are being used as sandbags. Corrugated boxes of all kinds are being used for the shipment of shells of all sizes, fuses

*Reserve of roll stock in storage.*

ALL PAPER PROCESSING PHOTOS COURTESY THE MEAD CORP.



and percussion caps, airplane propellers and bombs. Cellulose wadding, also a paper product, is used for bandages, for filters and absorbent purposes in gas masks, insulation for cables, for shell and cartridge wadding.

Wood pulp is used in the manufacture of smokeless powder and for rifles and guns, and in the manufacture of plastics for parts and instruments for airplanes, tanks, trucks and many other types of fighting equipment. The War Department is calling for increasing quantities of wood pulp as a primary source of cellulose for explosives. Great Britain and Germany have substituted wood cellulose widely for cotton in all their nitrated cellulose explosives.

Lend-lease activities call for large quantities of pulp and paper products. It is estimated that for every \$5,000,000,000 spent for lend-lease and war program needs, a million tons of pulp and paper are required. The lend-lease program for 1942 calls for 205,000 tons of wood pulp and possibly more before the year is out. The Army is using fibre containers for lend-lease shipments to economize in weight and space. The food industry has been called upon to furnish 45,000,000 cases of foodstuffs for Britain. This will employ 45,000,000 paper cases. Much of the lend-lease material sent to Britain must be protected for shipment by specially treated water-proof papers.

## SUMMARY

From the foregoing analysis, the following points about the paper situation are clear:

1. There is no paper shortage.
2. The whole scare was the result of war hysteria and unanticipated events which upset the best statistics.
3. Leaders of both paper industry and government are beginning to realize the mistakes that have been made and there is growing recognition on both sides of the need for higher defense classification of pulp and paper commodities in the war program.
4. The fact that there is a plentiful supply of paper for all requirements now should not be regarded as license for extravagant use of this valuable material, which for the duration must bear a heavy load as a substitute.
5. The patriotic citizens who helped so wholeheartedly in the waste paper campaigns must be told the truth about the situation in a sound public relations program, lest their enthusiasm be lost for future cooperation in later war conservation programs.
6. For the good of all, those who have capitalized on the rumored paper shortage to further their own ends must be made to feel that the public will not stand for such false flag waving.

*More and more paper packages will be seen in the nation's markets.*





# WATCH DOG

We have no quarrel with the newspapers because of their habit of playing up sensational ideas in order to make interesting reading. If we were running a newspaper that's exactly what we would do.

But when responsible business men make statements that can be and are easily distorted merely by playing up the dramatic side of them, then it becomes the duty of a business paper to restore the balance, if at all possible. The business paper has watch dog functions.

Case in point: E. A. Cudahy, President of the Cudahy Packing Co., last spring wrote a letter to Donald Nelson from which excerpts were taken out of context and avidly played up by the newspapers from coast to coast. An attempt was made to see Mr. Cudahy at his Chicago office, but he was out of town, so at the first opportunity this letter was sent to him:

Dear Mr. Cudahy:

Recently in Chicago I endeavored to get in touch with you, but your secretary told me that you would be out of town for several days.

This is what we wished to talk about. It occurs to us that your letter to Mr. Donald Nelson on the subject of packaging was widely misinterpreted and that you were put into a false position. This because of the fact that newspapers seize on a dramatic sentence and play it up sensationally out of its context.

We are thoroughly in accord with the idea that packaging at present must be simplified and that the emphasis must be on the *functions*, such as convenience, economy and protection. This type of packaging was splendidly exemplified in the Cudahy packages containing Puritan meat loaves which won a major award in the recent All-America Package Competition.

We believe that if it were possible for you to express your true position, you would agree that from the standpoints of economical marketing and protective packaging, the meat industry needs more—not less—packaging of the character typified by these Cudahy products.

Consequently this letter is to offer you the opportunity to express yourself fully and clearly on this important subject. For this purpose, the columns of Modern Packaging are open to you. It is our conviction that if you were to write a letter or article of this character you would be making an important contribution not merely for the benefit of the meat industry, but also for the benefit of packaging in general and above all for the benefit of the current emergency.

We shall look forward to your reply with interest.

Cordially yours,  
(Signed) C. W. Browne

We are happy to make room for the full text of Mr. Cudahy's reply, which he wrote under date of May 20—too late for inclusion in our June issue which had just gone to press. In his letter, Mr. Cudahy states with convincing clarity his position with regard to the packaging of foods by packers and other producers of foodstuffs. His statement serves to emphasize the point that we made previously—that a business paper has certain watch dog functions. They are brought into play when distortion, exaggeration or misinterpretation of the facts in a case which concerns those in the packaging field has been made.

Dear Mr. Browne:

Your letters of April 13 and May 1 both arrived while I was away on rather extended business trips, and not until today have I had an opportunity to acknowledge their receipt.

With reference to my letter of some weeks ago to Mr. Donald Nelson, Chairman of the War Production Board, in which I suggested the possibility of "Victory Packaging," I wish to make the following comments:

As you say, it is possible my letter may have been misinterpreted in some quarters. Of course, it is not my contention that the food industry should abandon packages which have proved worth their cost in promoting the sanitary distribution of food products and in increasing the convenience with which these products are handled. I do feel, however, that the food industry generally would do well to abandon extravagant and wasteful methods which it seems to me have become the fashion in packaging during the past few years.

It may not be overstating the case to say that practically every organization engaged in processing and distributing food products has tried to outdo every other organization in its field in developing novel and necessarily costly containers.

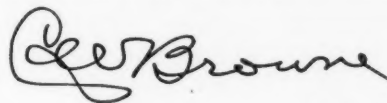
While it may be that some of these offer advantages, I think it is reasonable to assume that many more of them are of doubtful value. For instance, we may refer to the 1-lb. "trays," 1/2-lb. and even 1/4-lb. cartons and wraps for certain staple commodities. These are just a few items of a wide variety of styles of packaging which add materially to the costs of production and increase prices to the consumer in the same proportion. It is not unusual, indeed, to find instances in which the packages cost more than their contents.

In my opinion, we have permitted this packaging procedure to get out of hand. In our rush to build packages that flatter the vanity of the consumer, we may have lost sight of the basic reasons for packaging, and it seems to me that in the interest of the public and the industry generally this matter of packaging should be studied carefully and whatever economies are found possible should be adopted without delay.

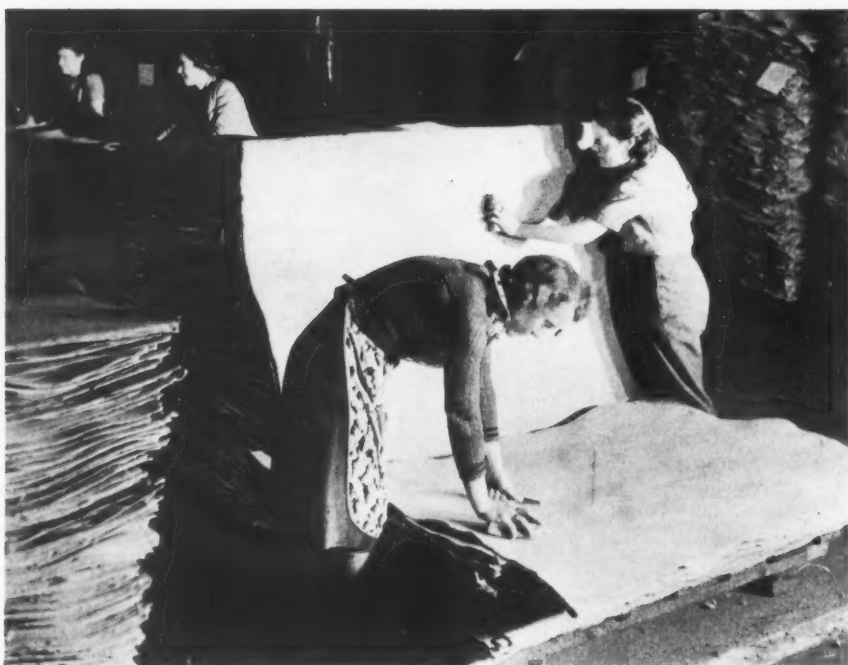
As for our immediate problem, it is obvious that if economies in packaging in normal times are for the general good, they are doubly so in a period of emergency as at present. Certainly this is a time for conservation all along the line in every industry and by every individual. In the national interest it is essential that all of us save materials and reduce costs. We of the food industry can effect a substantial saving by examining our packaging conscience now and revising whatever practices we find extravagant and unnecessary, keeping in mind that the fundamental purposes of packaging are to further sanitation and convenience and not to cater to the fancies of the consumer, fancies, by the way, we have done much to prompt and cultivate.

Yours very truly,  
(Signed) E. A. Cudahy

Thank you, Mr. Cudahy, for a clear and forceful statement of the functions of packaging which are important not only during this emergency—but always! Without detracting from those principles in the slightest degree, we would add a function which need not be inconsistent with them. A product can be *attractively* packaged without offending good taste and without violating the principles of economy, protection and convenience. The success of many a business may be traced to the attractive packaging of worthy products.



Editor



BRITISH OFFICIAL PHOTO

*In England paper is short and every scrap is salvaged to be repulped and made into paper again. These girls are removing imperfections in dry boards, made from salvaged materials, with wire brushes and special knives.*

## Britain on total war basis

by Denys Val Baker

With regard to the general position of packaging in England today, I cannot do better than quote from a comprehensive review given by John M. Ryan, director of the Metal Box Co., Ltd., and a member of the Packaging Committee of the British Standards Institution, at a recent conference with trade press editors. Ryan pointed out that now the position is so serious that the withdrawal of packaging facilities in some cases may mean the elimination of some products or, at the least, a changed marketing trend. For instance, he stated, if the shortage of materials for tubes is acute, the dentifrice trend may be to powders and solids.

Ryan pointed out that there were more than 100,000 people engaged in making and using packaging materials in Britain, even today, and therefore changes to the industry had repercussions on labour, transport, etc., right on down to the consumer. The industry was a very important one, but it was obvious that the most rigid economy had to be introduced into it. This economy was now being applied through the recommendations of the B.S.I. Packaging Committee, which had studied the packaging problems of more than 100 industries.

Continuing, Ryan said, "Board which is now being used for cartons is nearly all made from waste. White boards have almost gone. Owing to the Pacific war, big changes will have to be made in the field of tin-plate containers. Black plate will be taking the place of tin-plate to a very substantial degree. It will not look like tin-plate in many cases and the appearance may not be so good, but appearance is a psychological factor which can be got over. Black plate will be covered with lacquers as far as possible and experiments are now being

carried out to find in each case an appropriate lacquer which will prevent any deterioration. The supply of these lacquers may not be sufficient to do the job in the best way, but with some food, cocoa for example, this will not matter, as it is packed in a paper bag and inserted in the tin, so if any rust is to appear on the tin, it will not matter. With boot and floor polish, too, a little bit of rust will not matter. But in order to provide this coating, it may be necessary that the equipment formerly used for decoration will have to be converted for coating with a protective varnish. Thus there will have to be a reduction in the number of decorative colours. This applies to paper as well as tin-plate since many of the materials used in pigments are also in short supply. Already firms in many industries have been forbidden by law to use more than two colours in their packages—tobacco firms are an example. However, so long as the public can read the directions, there is no necessity for many colours and certainly no justification in wartime when stringent economy is necessary."

### Standardisation of packages

The various British packaging standardisation proposals have been described in a number of my past articles for *Modern Packaging*. It is interesting to note that all industries have welcomed these proposals, drastic as they have been. Firms feel that at least they know where they are. At first, of course, there was much worrying and something of a panic. In the tobacco trade, for instance, firms were shocked when they learned that the use of tin-plate must be cut by 40 per cent. They naturally imagined that their output would have

to be cut by this amount. However, the Tobacco Committee of the B.S.I. Packaging Committee, with the aid of packaging firms, discovered that by eliminating small sizes, which are expensive in the use of materials, and by using a new standard pack free from domed lids, recessed bottoms, ridges, etc., they are able to sell and distribute the same amount of tobacco, but using 40 per cent less tin-plate. The same has been the experience in other trades. Firms are finding that by the use of ingenuity in designing new types of packs, and research into possibilities of substitute materials, most packaging difficulties can be overcome surprisingly easy.

An appropriate practical example is found in a new type of carton just patented by the Bryant Carton Co., Ltd., which achieves an economy of nearly 30 per cent in board. Top and bottom, main panel and side flaps are in one piece with the body, being merely creased or scored. Side flaps have an inverted V-shaped perforation and all flaps are cut down to a width just sufficient to meet when the main panel flaps are folded over in closure. To close the carton, the main panel flaps are folded over inward towards each other, while at the same time the end flaps are pulled outward to form V-shaped projections which are then bent downward and the points of the V's are finally inserted in the slits in the side panels. Where additional lateral strength is required in a box, this may be obtained by cutting a normally shaped side flap out of the base of the side flaps which can be folded over inward before applying the method of closure described.

The same firm has also patented a four-bottle carton in which, to form the divisions, the body of the box is cut laterally about one inch from the top and to a depth to clear the side closures at the base. The cuts are creased to allow the angle pieces to fold inward, thus dividing the carton into four compartments. Incidentally, the Bryant company is quite willing, in view of the vital necessity for saving packing material, to license their patent to approved manufacturers under a purely nominal royalty and I am sure this would apply to overseas firms, too.

### Supply of tin and paper

Briefly, the supply position as regards packaging materials is this: The Ministry of Supply has brought out a new Order prohibiting the cutting of plain tin-plate for the manufacture of packages and crown corks for civilian use. Among the products affected are biscuits, confectionery, coffee, syrup, dried milk and milk foods, tobacco, oils, polishes, many pharmaceutical and toilet articles, ink and certain agricultural products. In place of tin-plate, firms are allowed to use sheet steel uncoated with tin or lead. Another new instruction is that milk bottle caps are in the future to be produced from aluminum instead of tin.

Commenting on the changes, however, the *Economist* points out that there is unlikely to be a great shortage of tin. Since December last, the magazine states, the use of tin in Great Britain and the United States for collapsible tubes and foil, which absorbed 5,000 tons of tin last year, has been virtually eliminated. In addition, the use of tin in solder and bearing metals has substantially declined and there is every chance that the consumption in the two countries will be reduced to a level at which current needs will be met by supplies from Bolivia, Nigeria, Belgian Congo, South Africa, Argentina and Cornwall in Great Britain.

Three new paper control orders have been introduced, raising prices of special packing and grading paper and of newsprint. Under a new Salvage of Waste Materials Order, brought in by the Ministry of Supply, it is now a punishable offense to

burn or destroy paper or cardboard, to throw it away or to dispose of it otherwise than to a collector or buyer, put it in a refuse bin or mix it with refuse. When the order was introduced, Mr. Ralph Assheton, Parliamentary Secretary to the Ministry of Supply, said it was estimated that since the start of the war, paper to the amount of 500,000 tons that might have been used for munitions had been lost through being burnt or thrown away. Expanding on these figures, J. C. Dawes, Controller of Salvage at the Ministry of Supply, has revealed that since wastepaper collection has been started, 639,159 tons of paper have been saved. To have brought into England wood pulp of equivalent tonnage would have required 116 ships each of 5,000 tons capacity.

It is also revealed that consumption of newsprint is now 4,400 tons per week or 228,000 tons yearly, while stocks in the country amount to 147,000 tons or 33 weeks' consumption. Domestic manufacture of newsprint is proceeding at the rate of 100,000 tons a year and it is hoped that the importation of newsprint from Canada will amount to 50,000 tons a year. Newsprint has been increased in price from £26 to £28 per ton.

### Substitute papers

Extensive research is going on into ways of making substitute papers. In Scotland firms are experimenting in the suitability of nettles as a raw material for paper making. The stem of the nettle contains fibres which have been used for making cordage, fishing lines, coarse cloth, etc., and it is believed the stems would be just as suitable for conversion into paper. Reeds, wood chips, bracken, potato shaws, marsh grass, hop vines and other vegetable fibres are among other materials which are being investigated. However, the most successful substitute material so far has proved to be straw, which is now being used in 50 mills. Last season's straw harvest amounted to some 9,000,000 tons (50 per cent above the previous year's harvest). It is estimated that the straw produces about 80,000 tons of paper a year. (Continued on page 92)

*London housewife finds egg substitutes and mixtures are given prominent display in all grocery stores.*

BRITISH OFFICIAL PHOTO





## Pipe carton



Continental Briar Pipe Co., Inc., makers of Royal Duke Pipes with Pur-o-matic bits, inject a military motif into their latest package design. The new patriotic package was developed not only for its timeliness, but also to establish a pipe vogue among the men in the armed forces. Red, white and blue are the colors used and the pattern features a shield emblem. A special sales message is carried in a prominent space set apart from the rest of the copy. This message points out the particular advantages of this laboratory-tested pipe, designed to remove impurities.

One side of the carton shows a cross-section of the pipe itself, illustrating how the smoke is filtered through the pipe stem. In window and other displays, to emphasize the purifying qualities of their pipe, the company furnishes an actual pipe with part of the stem and bowl removed in order to show how the pipe is constructed.

The carton itself is one of the first to be produced out of salvaged materials. The stock for the carton is a combination of waste materials with a percentage of new stock which gives a clear, white surface necessary for clear printing. The salvage used is clean material made from re-pulped over-issue newspapers, chemically washed and purified in the process of manufacture. This material is included in the filler and back liner of carton.

*Credit: Design by Thomas McManus, Duane Jones Co. Carton by Climax Mfg. Co.*

# DESIGN HISTORIES

## Awning paint



It isn't often that a news angle can be incorporated into package design, yet that is what the Aridye Corp. has done in designing the new containers for their Setfast awning paint. The metal can was the first container developed, then, when the government ruled out the use of metal for paint, Aridye developed the glass jar to be placed on the market as soon as their present supply of cans has been used up. The same label design created for the can has been very cleverly adapted for use on the jar, thus maintaining continuity in package appearance.

In January an unprecedented Army-Navy decision to place immediate orders covering full requirements for cotton duck brought an OPM order directing all manufacturers of cotton duck to devote their entire production capacity to military use.

Just before the war came, Aridye Corp., a subsidiary of Interchemical Corp., had developed a new kind of preservative paint for canvas awnings. It was only natural to promote this paint with the thought of the awning scarcity in mind. Consequently a design for the can was selected which would bear out this promotional idea. Around the top, the design is made to simulate the flaps of an awning and the alternating colored panels, the familiar gay, wide awning stripes. Directions and suggestions for using the paint are on the sides of the containers.

*Credit: Cans by National Can Corp. Jars and closures by Anchor Hocking Glass Corp. Labels by Wayside Press.*



## Coffee carton

One of the first of the well-known brands of coffee to change over from tin to paperboard is Wilkins Coffee, made by John H. Wilkins Co. The company puts out two grades of coffee, regular and drip, the former for the old-style coffee pots and percolators and the latter for the newer types of coffee makers.

The former rich brown and buff can has been familiar for many years around Washington, D. C., in hotels, clubs and in homes near the capital. The can was vacuum sealed and opened with a key. When the government issued its Tin Order, restricting the use of tin and asking the cooperation of all manufacturers in the conservation of tin, the Wilkins company began immediately to plan a package for its coffee which would release this material.

The company finally decided upon a 1-lb. paperboard carton with a liner. The top of the carton is scored to form a tab. When this is lifted an inner thumb-holed and scored centerpiece may be pulled up. The liner is then broken and the coffee poured through the small aperture. When not in use the carton may be tightly re-closed by tucking the inner tab into a slot.

The design on the present paperboard carton follows very closely the design on the tin. The same brown and buff colors are used. The background is buff in both the regular and the drip type of grinds, but the latter carries a circle of deep orange, whereas the regular has a circle of deep brown.

Credit: Carton by Robert Gair Co., Inc.



# DESIGN HISTORIES

## Paint in fibre

Liquid paint can be put up in fibre containers so it will stay put, the Sherwin-Williams Co. has found. At the end of four months of development and testing in its Chicago container plant, the company started production on a paper-bodied paint can having metal ends and an inside liner of parchment paper. The label, shown on the left in the photograph, goes completely around the fibre can.

The fibre body is impregnated with an insoluble substance and the parchment paper lining was added to provide additional color insurance, according to a statement by H. J. Hain, vice president of the company. The hardest problem to solve was development of a paper-treating process that would effectively prevent absorption of solvents and oils or "wicking," as it is called. Early models, after standing for a while, would be permeated with oil and soggy to the touch. It proved extremely difficult to treat paperboard so it would not "wick" around the "bite," where the metal end clamps to the body.

The new container has successfully passed "wicking" and evaporation tests in the company's laboratories and cartons of these containers full of paint have been shipped successfully. Although Sherwin-Williams has placed the new container on the market, experimental work continues. New substitution planned will be lacquered iron ends in place of lead-coated sheeting. The company discontinued using tinplate for its containers several years ago because lead was as satisfactory as tin and less costly.





*Bessie Beatty and Charles A. Breskin in an informal interview over radio station WOR discuss some of the problems nearest to the hearts of individual shoppers.*

## On the beam

War problems in packaging were aired—literally—over station WOR on Tuesday, May 26, when Bessie Beatty, well-known commentator, interviewed Charles A. Breskin, publisher of *Modern Packaging*.

"What does the future hold," Miss Beatty asked, "for new packages, substitutes for unavailable materials?"

"American ingenuity," Mr. Breskin replied, "will come to the rescue of the tin can user, the tube user and the packager who has formerly depended on materials that are now strategic. We have sufficient resources of the available type, such as wood and paper, and a vast reservoir of resourcefulness in our development men, our packaging engineers, which, combined, will produce new packages, new materials, new types of containers. Some of these developments have been created in normal times, needing only the stimulus of scarcities to bring them into our economic life. Others are being worked out now. The laboratories of this country are teeming with replacement materials."

"Can plastics be considered among these?" Miss Beatty wanted to know.

"Not to be evasive," Mr. Breskin replied, "that question can be answered by 'yes' and 'no.' Plastics have replaced other materials in peace times, although that is not their normal job. Rather, they might be considered extenders of other materials, working beautifully in cooperation with metals, stones, woods, etc. Right now, they cannot be considered as substitutes at all in the packaging field. They are doing such an important job in direct war applications for ordnance and industry that they cannot be spared for jobs, however important, that are considered by our priorities boards to be less essential than their present tasks."

Miss Beatty then asked, "Can you tell our listening audience of some of the developments in packaging?"

"This container I hold in my hand," Mr. Breskin said, "is one example. It is a paper lipstick, using absolutely no essential materials. We know that our lipstick manufacturers are now turning out bullets and shells on the equipment formerly used for the lip rouge container. This paper job is beautiful and practical. It is light in weight and has the spiral propel-repel device found in the former metal cases. It was developed by the F. N. Burt Co. and is used by Elizabeth Arden in her summer kits. The company has also developed some exceedingly unusual and important items such as a paper talcum can—*top and all*—that uses absolutely no metal, nothing but paper and some wood."

Miss Beatty: "My, that sounds exciting—anything else?"

Mr. Breskin: "They have also developed a paper closure for jars, which will be very important, and a paper compact."

Miss Beatty: "That sounds like a lot of paper."

Mr. Breskin: "Every field of packaging is blooming with developments. The glass field has the new lightweight and strong containers. The coating field is working with all sorts of synthetic waxes and coatings that are proof against water, moisture, grease, acid and so on. The metal collapsible tube field has come up with substitutes that will keep this package rolling for some time to come. The important thing is the over-all picture . . ."

Miss Beatty: "I think you've given me and our listeners an encouraging view of that. The future holds fewer terrors for us now that we know that the American packaging industry is still looking after our interests."

# “Victory victuals in priority packages”

To dramatize the shifts in packaging under the impact of war, a luncheon, exhibit and round table discussion, “Victory Victuals in Priority Packages,” was arranged by Modern Packaging and WOR and given at the home of Miss Bessie Beatty near Gramercy Park, New York City, following her radio interview on May 26 with Mr. Breskin, described on the opposite page.

The object of the luncheon was to bring home forcibly to food packers, advertising men (whose future billings depend to a great degree on the availability of their clients’ packages) and consumers the changes in packaging and the adaptations that might be made to changes in materials.

Cooperation of packagers was asked and given wholeheartedly in formulating a menu for the luncheon that would put emphasis on packaging, new processes and available materials. First course was noodle soup, supplied by Thomas J. Lipton. This was a dehydrated soup, packed in paper envelopes, now replacing foil envelopes. The main course consisted of deviled chicken, made from frozen Birds Eye fowl packed in a waxed carton, and green peas, frozen by Z-Pack and packed in a cellophane double-wall bag. Potatoes and salad were fresh vegetables, inexpensive and easily purchased at all local stores. Peaches were frozen (Z-Pack). Coffee was Ehlers, a local brand packed in a Thomas M. Royal Flav-O-Tainer bag. Cocomalt was also served as a beverage. It was mixed with a canned dehydrated milk, marketed by the Borden Co. under the name of “Klim.”

The exhibit of packages was set up by Modern Packaging magazine. Some of the containers on display included the new cartons for dehydrated dog foods, the U. S. Army’s “K” Ration, the moisture-proof bags made from Reynolds Metals’ new material, some packages from “Parcels For The Forces” for shipment overseas, such as tinned butter, dried eggs, etc. Also included were the paper talcum cans, lipsticks and compacts developed by the F. N. Burt Co. and the first commercial use of the new lipstick by Elizabeth Arden in her summer complexion kit.

The round table discussion was presided over by C. W. Browne, editor of Modern Packaging. Mr. Browne hit out at decriers of packaging by presenting a horrible example—a cow’s beauty kit. This was an over-packaged product consisting of several tin cans on a set-up platform, the whole covered by a rigid transparent lid. “I introduce the subject with an example of what not to do,” Mr. Browne said, “in order to emphasize the true worth of packaging.”

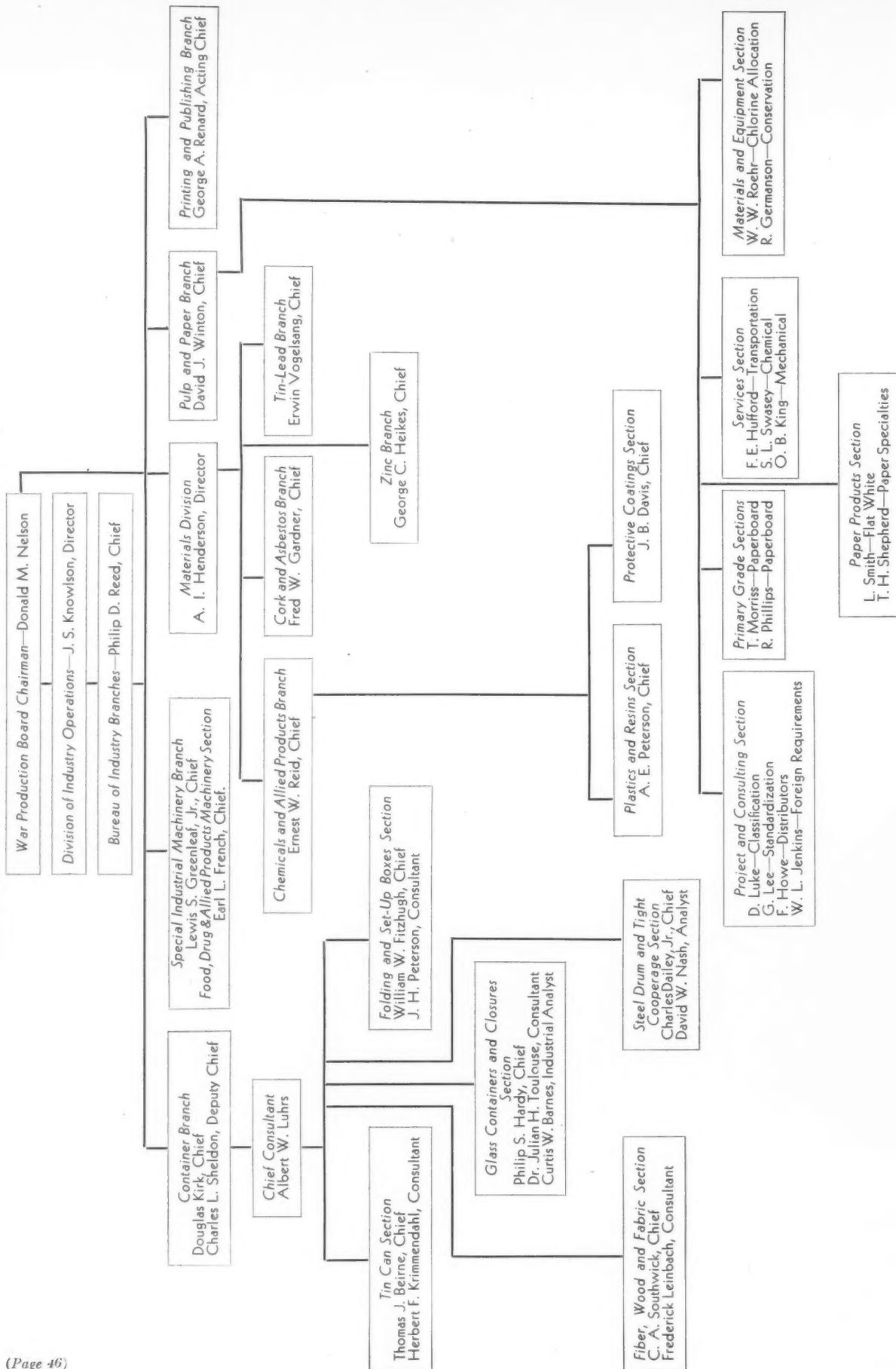
Speakers at the luncheon included E. W. Love of the Bristol-Myers Co., Robert T. Kesner of the Frosted Food Sales Corp., C. A. Breskin of Modern Packaging and J. D. Malcolmson of the Robert Gair Co.

Mr. Malcolmson said: “At (Continued on page 89)

Reading from left to right: (1) Theodore C. Streibert, vice president and general manager, WOR; Charles A. Breskin; J. D. Malcolmson, Robert Gair Co., Inc. (2) C. W. Browne, editor, Modern Packaging; Miss Bessie Beatty; William Sauter; R. C. Maddux, vice president in charge of sales, WOR. (3) Miss Beatty and Pat Hurley, picture editor, WOR, examine some packages.



(Page 46)





*Have you got  
what it takes?*

THIS is the question that is answered quickly enough in a foxhole, in the cramped space of a bomber's turret, along the smoking barrels of hot guns on a dozen battle fronts. It is a question that means life or death in war.

It is a question that is pertinent at all times in business.

In peacetime you can allow a margin of error in your package supplier. In wartime you can't trifle with specifications. You must be able to depend on your package manufacturer for miracles. Burt, proved over long years of peacetime manufacture, reaffirms its basic flexibility, resourcefulness and ingenuity with the totally new packages—made of paper and board to replace non-available metal containers—it has developed to meet the new necessities. These are packages that breathe "what it takes"—a sifter-top can, a paper jar closure, a paper lipstick and compact. A service as reliable as Burt's should not be overlooked by any packager at any time under any conditions. The packages themselves, will be pictured and described in this space in subsequent issues of Modern Packaging.



NEW YORK CITY - PHILADELPHIA - BOSTON - ST. LOUIS - ATLANTA -  
GEORGIA - CHICAGO - CLEVELAND - CINCINNATI - NEW ORLEANS  
MEMPHIS - MINNEAPOLIS - KANSAS CITY - LOS ANGELES

DANVILLE, CALIFORNIA (Near San Francisco)  
A. G. Spilker, P. O. Box 126, Telephone: Danville 27

CANADIAN DIVISION: Dominion Paper Box Company, Ltd.  
469-483 King Street, West, Toronto 2, Canada

**F. N. BURT COMPANY, INC.**  
500-540 SENECA STREET, BUFFALO, N. Y.



# Packaging

**1** Lightfoot Schultz Co., makers of charming and clever soap sculptures, originated this decoy duck for the youngster's bath. Decoy of soap in brown and green of the mallard duck comes boxed with a small bath brush. The bottom of the extension edge box with full telescope lid is surrounded inside with reeds and cattails for a make-believe marsh. The soap duck sets on the brush and when the lid is off, the effect is that of a real decoy just outside the hunter's blind. Design on the lid has cattails and flying ducks in full color. Set-up box by Musto Bros.

**2** New carton for Messing Cakes adopted by Messing Bakeries, Inc., has both a bottom and lid which can be set up instantly by hand at packing tables. In addition to saving of time, labor and storage space, the new carton effects definite saving in material. Former cartons used required setting up prior to being filled and closed. Carton by Robert Gair Co., Inc.



**3** Sears, Roebuck & Co. merchandises its Craftsman auger bits in these letter-box type display containers. Bits are sold with the holder included so that the retail purchaser has a container that has real utility value. The metal box gives full protection to the tools and furnishes an attractive display piece for a hardware item. Made by Advertising Metal Display Co.

**4** Jeurelle's "priorities" combination package of cologne and talc for men is distinctive and has definite masculine appeal. The cologne comes in a good-looking "darning egg" shaped bottle, its slender neck wrapped with raffia and topped with a knobby wooden closure. The talc is packaged in a convenient shaker-top cylinder with an attractive beige and brown color scheme. The two items are packed in tweed-like beige and brown paper set-up box with touches of wood, a leather strip which serves as a fastening and a bright wax seal.



# Pageant

5 Lenthéric's Overnight Kit of men's toiletries contains a bottle of after-shave lotion, a bottle of Tanbark cologne and a fibre can of after-shave powder. It is compactly designed with a snap button fastening, is covered with a wood-grain paper and has a decorative polo player in action on the lid. The set-up box is lined with a silver metallic paper and has a hinged lid.

6 When the priorities ruling banning the use of tin for beans stopped distribution of Van Camp's Pork and Beans, the company was in the middle of an advertising campaign for the product. The campaign, of course, was killed by the tin ruling, so Van Camp's went to work developing Tenderoni to take the place of the pork and beans product. Tenderoni was introduced on the market in this cardboard carton, which was designed, approved and in production in less than four weeks from the time the advertising campaign was cancelled on the pork and beans.

7 "Saturday is Manicure Day" is the slogan for the group of Cutex packages of cuticle remover, polish, emery boards and nail white pencil. The remover and emery boards have smart new carton with a matching card for the pencil. Done in red, white and black, the packages follow the vogue for streamlined lettering and design, adding a bright color spot that focuses attention on the manicure counter.

8 A practical shaving set is found in this three-piece one by Whisley with pottery containers. Green jugs of talcum and shaving lotion have round wooden closures. The soft green shaving mug has a paper liner for product protection. It is printed with the brand name, Spruce, and with spruce tree cone and needles. Containers are set in recessed trays. Mugs by Shawnee Potteries. Jugs by Greene Ceramic Products.

9 A "sniff kit" which will teach anyone who would like to know, the smell of five different kinds of poison gas—but without any poisonous effects—is the newest contribution to civilian defense by Northam Warren Corp. The kit has been approved by the Office of Civilian Defense and the Chemical Warfare Service of the Army and is designed for training civilians to detect and identify various types of poison gases. Packed in a trim, tan fabric-covered box are five glass-stoppered bottles, each containing a simulated gas—mustard, phosgene, chlorpicrin, Lewisite and tear gas. Labels describe effect of each gas.





# WASHINGTON ROUND-UP



## NEW ORDERS

★ **Cellophane**—L-20, amended June 8, effective on issuance. Original order is amended to further prohibit non-essential use of transparent cellulose sheets under .003 in thickness. Original order applied to cellophane .005 or less. Under the amended order cellophane may not be used in window cartons, for overwraps, for packaging animal food, rubber nipples and candy. The only wrapping uses permitted are those which perform food protective functions. Cellophane of greater thickness than .003 will be covered under the overall plastics use limitation order still being studied.

★ **Coatings for steel containers**—M-158, issued May 30; effective June 20. Forbids for domestic or civilian use as coatings on drums of two gallons or greater capacity materials containing tung, oiticica, perilla or dehydrated castor oils; alkyd, phenolic, vinyl, urea or melamine resin; or cellulose esters or ethers. Use of any other coating than black (except for small areas required for identity or legal requirements) is forbidden after effective date of order.

★ **Collapsible tubes**—M-115, amendment 1; issued May 11. The Tin Salvage Institute, sponsored by the industry, is designated by the government as the official agency to which to send used collapsible tubes.

★ **Copper**—M-9-c-3, amended May 30. Permits use of bronze powder in manufacture of paste, ink, leaf, and paint until Dec. 15, 1942. Prohibits all use of products made with bronze powder for these purposes after Dec. 31, 1942.

★ **Containers, non-metal**—P-79, amended May 16. To expedite manufacture of non-metal containers, priority rating of A-1-c is assigned for delivery of ferrous metals used in their manufacture.

★ **Glass containers**—L-103, issued May 11. Freezes all glass container designs to existing molds, except upon the following conditions:

- (1) When a schedule or exhibit thereof issued by the Director of Industry Operations specifically authorizes the use of a design not theretofore made in glass.
- (2) When no suitable glass container exists for packing a product not previously packed in glass.
- (3) When it is necessary to design a special glass container in order that it can be used on an existing filling and packing line previously used for containers made from other materials.
- (4) When a minor change in an existing permitted container design will result in a glass container that is lighter in weight in proportion to its capacity, or in a glass container that can be made faster or more efficiently, or of better quality, except that such change shall not be permitted unless the former design is then abandoned.
- (5) Any new design permitted by sub-paragraphs (2), (3) or (4) of this paragraph (d) must be submitted to the War

Production Board, ref.: L-103, for approval before adoption by a manufacturer of glass containers.

★ **Closures for glass containers**—M-104, issued May 30. Limits supply of tonnages of blackplate to be used for non-alcoholic beverage bottle caps. Prohibits use of blackplate after Aug. 1, and of tin, in the manufacture of closures for wine and distilled spirits.

★ **Industrial machinery**—L-83, amended May 18. To the 14 classes of machinery in the original order are added three new classifications: coffee grinding, dairy equipment, and food slicing and grinding machinery.

★ **Tin**—M-43-a, amended June 5. Contains additional list of products on which or in manufacture of which tin is prohibited; order is actually a re-writing and consolidation of the several previous amendments, and supersedes previous restrictions.

## NOTES AND COMMENT

★ **Tin**—Although the steel and tin situations are still critical, no sharp increase in the curtailment of tin is expected during the balance of 1942. Will remain as provided in Conservation Order M-81. An amended M-81, now in preparation for announcement next September or October, will shoot at simplification and clarification with some additional curtailment. The packaging quotas, however, will remain substantially the same.

The outlook for tin in 1943 depends largely on the available amount in our stockpile. Next year, according to officials, most tin will be electrolytic plated rather than hot dipped. This is expected to result in a substantial savings of the critical material as the electrolytic process uses only .5 per cent in the coating process. Hot dipped method consumed 1.25 per cent.

WPB amended Conservation Order M-81, curtailing the use of tin in the manufacture of containers for vegetables and other products, by ordering the substitution of chemically treated blackplate for tinplate and terneplate in the manufacture of the ends of cans. In addition, it proposed to substitute electrolytic tinplate for hot dipped tinplate in making the ends of cans for other commodities. This action follows the recent WPB orders limiting the use of blackplate and prohibiting the use of tin in bottle caps for beer, wine, liquor and soft drinks.

★ **Milk cans**—WPB is expected soon to order all but two, or possibly three, milk can manufacturers to convert their plants to the production of war materials.

★ **Glass**—WPB is also reported preparing additional orders regarding the manufacture of glass bottles. These orders





# EMERGENCY UNLIMITED

The limitations and restrictions imposed by the national emergency make full cooperation more urgent than ever. While we are of course doing all that we can to fill your orders as promptly and completely as possible, here's something *you* can do to assist in meeting the dislocations caused by America's war effort:

- . . . use only the smallest closures practical for your purposes.
- . . . adopt liners and coatings which do not contain materials essential to war production.

If, in applying these recommendations to your

particular requirements, you would like the help and suggestions of CCS Technologists, we shall be very glad to work with you in every way we can.

Every facility of modern research is now being used to find ways in which available materials can be utilized more efficiently and economically. However, you may be sure that the *quality* of CCS Closures will be maintained carefully, within the limitations of governmental permission.

**CROWN CORK AND SEAL COMPANY, BALTIMORE, MD.**

*World's Largest Makers of Closures for Glass Containers*

**FOR THE LAST WORD IN CLOSURES—  
COME TO CROWN FIRST!**

★ CROWN'S PART IN WAR PRODUCTION—  
Building tripod mounts for anti-aircraft guns.



will aim at reducing the consumption of bottle caps by calling for the production of larger-sized containers. Designed particularly for milk, beer and liquor bottle manufacturers.

★ **Canning cases**—The Containers Branch of the WPB urged canners to cover their requirements for wire-bound, nailed wooden or weatherproof solid fibre boxes, made in accordance with the terms of Order M-86-a as soon as possible. These are the only type boxes allowed to be used in the packing of canned fruits and vegetables under the terms of an amendment to the order.

★ **Fabrics**—Ceiling prices for all types of new bags made from cotton and burlap fabrics were established by the OPA. In general, the regulation specifies that the ceiling price delivered to any point of delivery shall be the replacement cost of the textile material from which such new bags are made on the date of sale, plus the manufacturers' highest March 1942 conversion margin. The regulation will affect chiefly sales and deliveries by manufacturers to consumers.

T. M. Bancroft, chief of the Carded Cotton Fabrics unit of the WPB, announced that the entire production of osnaburg and bag sheeting will be needed to meet minimum military and agricultural demands. This statement was made following reports that an over-production of osnaburg was probable.

★ **Wood**—All wooden containers except cooperage products were covered under a special maximum price regulation by the OPA during the month. The regulation allows such container manufacturers to add their dollar-and-cents' profit per unit on last year's output to their unit costs on this year's production. Such specific regulation for pricing such containers was found necessary because sales on many such commodities were not made during March 1942, the General Maximum Price Period.

★ **Please stay home**—One of the constant headaches faced daily by many war agency officials, according to a government spokesman, is the influx to Washington of manufacturers, producers and distributors who think they know all the answers.

"A perfect example can be found in the Containers Branch of WPB," he declared. "In the field of substitute containers, many of which will have to be found to replace our dwindling supply of normal boxes and cans, people keep bombarding division chiefs with all sorts of opinions regarding a container they have developed to replace one no longer available. Not one of them has ever brought along any factual material to back up the claim. Nothing is self-evidently wonderful," he said. "If facts in the form of scientific test data are not handy to back up mere opinions, people should not waste their time and ours coming to Washington.

"Don't get the idea we don't want people coming in to discuss these problems with us. We are always glad to have them, if they have actual test or experimental data to prove their argument."

He then stated that such data should include findings on the strength and stability of the product, its resistance to atmospheric changes, etc.

"If it's a container, can it stand up under shipping and handling? Has it been subjected to such tests? If so, with what result? How about its functions in terms of the product

contained? How about proof in terms of accelerated tests? How does it act with dehydrated materials? Will it keep them that way? These are the things we want to know," he added. "Bring us this information, not just an opinion. Performance is the only thing that counts today. There is no time now to allow for research. We are in a war and problems created by this war, or any war, are not solved during the middle of it. We will have to get along for the most part on the information available prior to the conflict. In regard to civilian needs, convenience is not important. Let's just get the products to the consumer in the most efficient way we can as compatible with buying and using habits.

"The main thing to remember," he concluded, "is that it is too late now to experiment on substitutes, and even if you believe your idea is perfect, we have not the time to waste developing that idea into the actual product. However, if you have, yourself, experimented and found the idea workable and have scientific proof of its quality, come on down and talk with us. Otherwise, please stay home."

★ **Cosmetics**—The Toiletries and Cosmetics Branch of WPB is discussing with the Industry Advisory Committee terms of proposed orders to limit certain toiletries and cosmetics items, as well as to simplify containers and reduce the variety of products, shades, colors and sizes. The Branch is studying a classification of products to eliminate the non-essential ones and curtail the output of all others except those considered non-essential.

★ **Flour mixes**—"Packaged" flour as applied to "cake mixes" and "flour mixes" in the General Price Regulation of OPA is a term intended to cover "consumer-sized" containers. The definition issued May 27 stated: "Sales in containers larger than three pounds are in general 'bulk' sales and manufacturers' margins are much smaller. Consequently, the prices of bulk sales closely follow raw material markets. It is, therefore, the opinion of the Administrator that the term 'packaged' should be limited to containers of three pounds or less."

★ **Folding boxes**—Folding box makers are informed by their association office that government bids on cartons for eight-round ammunition clips, formerly referred to as KDF Brightwood boxes, now call for "a box that can be glued on regular automatic gluing machines at a much higher rate of production." The quotation is from the Association bulletin, which points out that if box makers did not receive the invitation to bid, it is due to failure of the manufacturer to register his facilities or failure to follow up the Ordnance District closest to the manufacturer's plant.

★ **Laboratories**—Private laboratories and university research departments not engaged in direct war activity will—as a result of Limitation Order L-144—be unable to obtain new laboratory equipment unless the particular use is approved by the Director of Industry Operations.

★ **Adhesives**—"Blackout" of imported root starches such as tapioca may be ended by development of domestic products suitable for making adhesives, according to announcements by the U. S. Dept. of Agriculture in reporting tests of waxy sorghums grown in the United States. When these developments emerge from the experimental stages, full details will appear in *Modern Packaging*.



## BIG MEN ARE MADE IN TIMES LIKE THESE...

OUT of trying times emerge big men—leaders in every line of effort—because these men are able to visualize and plan for the future. Today is taken in their stride and Tomorrow brings them success because they are ready for it. In your plans . . . in your future . . . there is a place for Heekin Metal Packages . . . lithographed in color. Right

now our batteries of high speed presses work day and night for Uncle Sam and his children. Heekin color lithography is outstanding. If you need rapid, large volume production on a package used in Defense, we can serve you quickly . . . efficiently. In the meantime—Look Ahead.

THE HEEKIN CAN CO., CINCINNATI, OHIO



# HEEKIN CANS

*Lithographed Cans*

WITH HARMONIZED COLORS



# Testing folding endurance of paper

*Third of a series on methods of tests for various properties of paper,<sup>1</sup> reprinted from published standards<sup>2</sup> of the American Society for Testing Materials. Other articles of the series appeared in the February and June, 1942, issues of Modern Packaging.*

## Scope

1. (a) These methods of test for measuring the folding endurance of paper cover two test procedures, as follows:

Method A—Schopper Folding Endurance.

Method B—M.I.T. (Massachusetts Institute of Technology) Folding Endurance.

(b) The Schopper apparatus is applicable for testing papers having a thickness of not over 0.01 in. The M.I.T. apparatus can be adjusted for testing papers of any thickness. There is no constant relation between the values obtained with the two types of apparatus.

## Method A—Schopper Folding Endurance<sup>3</sup>

### Apparatus

2. The apparatus shall consist of the following:

(a) *Schopper Tester*.—Two horizontally opposed clamps, approximately 10 cm. apart, provided with spring tension which varies during the folding cycle as a slotted folding blade, sliding back and forth between creasing rollers, folds the paper. The clamps, while in motion, shall be freely suspended between the tension springs, except that they shall be supported from below by rollers. The folding blade shall be 0.50 mm. (0.02 in.) in thickness, and the edges of the vertical folding slot shall be cylindrical and shall extend somewhat above and below the normal position of the test specimen. The four creasing rollers, each approximately 6 mm. (0.24 in.) in diameter and 18 mm. (0.71 in.) in length, shall be arranged symmetrically about the midposition of the folding slot, and shall preferably be provided with jewel bearings.

(b) *Motor*.—A means of imparting harmonic motion of constant period to the reciprocating blade. A power-driven apparatus is preferable.

(c) *Counter*.—A device for registering the number of double folds, which stops automatically when the specimen is severed.

### Calibration of Apparatus

3. (a) Test the clamps by fastening a specimen in place in the manner described in Section 7, alternately applying and releasing the tension a number of times. Then, with tension released, note whether the specimen remains smooth and straight as originally inserted. Buckling or waviness indicates a faulty clamp allowing the specimen to slip.

<sup>1</sup> Under the standardization procedure of the Society, these methods are under the jurisdiction of the A.S.T.M. Committee D-6 on Paper and Paper Products.

<sup>2</sup> Accepted by Committee E-10 on Standards, August 25, 1941.

<sup>3</sup> For further details of this method reference should be made to the following articles:

F. P. Veitch, C. F. Sammet, and E. O. Read, "Folding Endurance of Paper," Paper 20, Nos. 12, 13, May 30, 1917.

W. Herzberg, "Resistance to Folding," Chemical Abstracts, Vol. 14, No. 2262, July 20, 1920.

L. W. Snyder and F. T. Carson, "Calibration and Adjustment of Schopper Folding Tester," Nat. Bureau Standards, Technologic Paper, No. 357, October 15, 1927.

"The Schopper Bending Endurance Tester," Instrumentation Report No. 23, Inst. Paper Chemistry, Paper Trade, Journal 109, No. 5, p. 35, August 3, 1939.

(b) Inspect all rollers for worn surfaces and for bearing friction, and make the necessary corrections. Adjust the supporting rollers so that they do not bind against the clamps in any position. With leaf gages inspect the four creasing rollers for parallelism and clearances. Also, make sure that the two edges of the folding slot are parallel with each other and with the creasing rollers. Adjust the distance between the folding blade and the two creasing rollers on each side to 0.38 mm. (0.015 in.), and the width between rollers of the space occupied by the unbent specimen to approximately 0.5 mm. (0.02 in.). As a final test of alignment, fold a specimen somewhat short of failure and inspect it for uniformity of wear along the crease. If the specimen seems weaker at one end of the crease than at the other, faulty alignment of the rollers or the folding slot is indicated (if the clamps have been properly adjusted), which may result in low values for folding endurance.

(c) The roller friction may be measured by means of the bell-crank-lever weighing device, as follows: First, set a pair of bow dividers to show the displacement of each clamp when loaded directly with 1 kg. Then, shift the weighing device 90 deg. so as to load a clamp through a ribbon passed around one of the creasing rollers. Add weights in excess of 1 kg. until the direct 1-kg. displacement is reproduced. This excess weight is a measure of the roller friction in terms of the increased tension it will produce. Repeat the measurement for the other three rollers. The excess weight required shall not be greater than 100 g.

(d) Adjust the tension spring attached to the clamps against a dead-weight load so that the tension on the specimen during a test is 790 g. when the clamps are farthest apart (and when the specimen is straight and free) and 1 kg.  $\pm$  50 g. when they are nearest together. Make adjustments preferably on the assembled instrument with the aid of a suitable weighing device, such as a balanced bellcrank lever with knife-edge fulcrums at the center of gravity, capable of balancing the tension of a horizontal spring against the weight of a known mass. Fasten a strip of strong paper or celluloid, about 0.005 in. (0.127 mm.) in thickness, in the clamps and apply the tension. Set a pair of bow dividers (by spanning the distance between two suitably placed fiducial marks, such as small punch marks) to show the displacement of each clamp. With a load of 790 g. acting on one clamp and spring, adjust the spring until this displacement is reproduced. Repeat for the other spring. To verify the tension at maximum displacement, set a pair of dividers to show the displacement of each clamp when the folding blade has pushed the crease in the specimen to the end of its stroke each side of the midposition (four measurements). With the aid of the weighing device, load each clamp until this displacement is reproduced in each case. The load required in each case should be approximately 1 kg.

(e) Apparatus in steady use shall be adjusted and calibrated at intervals of not more than one month.







# Silverlite

...the most important of these is the fact that the Silverlite is a truly revolutionary new type of lighting fixture. It is designed to provide a soft, even illumination that is free from the harsh shadows and bright spots of ordinary lighting. This is achieved by the use of a special diffuser which spreads the light over a wide area, creating a comfortable and relaxing atmosphere. The Silverlite is also very energy efficient, using only a fraction of the power of conventional incandescent bulbs. This makes it an ideal choice for those who are concerned about their electricity bills. Finally, the Silverlite is available in a variety of styles and finishes, allowing you to choose the one that best fits your decor. Whether you are looking for a modern, minimalist design or a more traditional, ornate look, the Silverlite has the perfect solution for you. Its combination of style, functionality, and energy efficiency makes it a truly unique and valuable addition to any home or office.





*Silverlite*

**GOLDLITE**

*New* papers with the brilliance of non-available metal foils.

Mirrored in the bright papers upon which this is printed, is Dejonge unceasing laboratory and production work to bring to the packaging industry utility papers for essential packaging, and plain and fancy papers for gift and general packaging.

Whatever the future may bring Dejonge service will go forward with a patriotic fervor.

**LOUIS DEJONGE & CO.**

161 SIXTH AVENUE, NEW YORK, N. Y.

CHICAGO - BOSTON - PHILADELPHIA

**REPRESENTATIVES**

PACIFIC COAST—ZELLERBACH PAPER COMPANY

S'WEST—POLLOCK PAPER & BOX CO. —DALLAS

CANADA—E. H. WILKINSON & CO., LTD.—TORONTO



# GOLDLITE

Send me working samples of SILVERLITE and  
GOLDLITE PAPERS

Name.....

Company.....

Address.....

*New* papers with the brilliance of non-available metal foils.

Mirrored in the bright papers upon which this is printed, is Dejonge unceasing laboratory and production work to bring to the packaging industry utility papers for essential packaging, and plain and fancy papers for gift and general packaging.

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### REPRESENTATIVES

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CANADA—E. H. WILKINSON & CO., LTD.—TORONTO

1912

1913

1914

1915

1916





## Worth looking into!

Here's a picture you'll find well worth looking into! A picture that not only makes it possible for you to offer your product in a patriotic package, but also helps conserve substantial quantities of such critical materials as steel, tin and tinplate!

We're talking about Anchor Hocking glass. Today, it offers you many outstand-

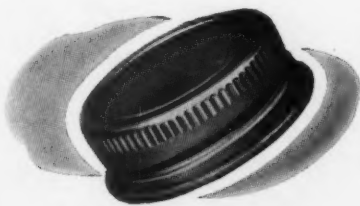
ing advantages which spring from a variety of *new* developments. In addition, Anchor Hocking provides, at no extra cost, the services of its experienced specialists in engineering and biological and chemical research. These men know packaging from every angle, are particularly important to new users of glass who seek thoughtful help and counsel.

Remember—Anchor Hocking makes containers *and* closures. And because they're made for each other, are available from a single source of supply, it will pay you to get both in the Anchor Hocking complete package. Of course, if you wish them separately, your friendly Anchor Hocking packaging engineer will be happy to serve you.

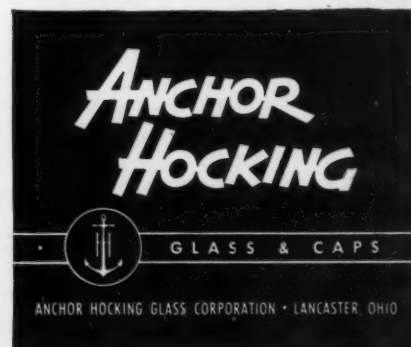


### Worth looking into! Anchor Hocking Containers and Closures for DRUGS

The practical shape of the Standard Blake in the Anchor Hocking line is one reason why these containers are such outstanding favorites. They provide convenient handling and storage, are available in 26 sizes, from 1/8 oz. to 32 oz., are ideal for pills, powder, tablets, capsules—a size for every product and requirement. These containers fill and empty easily, have excellent labelling space.



The Anchor Improved C. T. Cap... Pitch of cap thread and glass container thread matches throughout their entire length, gives better, tighter seal. Absence of interference between cap and container threads makes cap easy to spin off or on. Fine knurls, cylindrical side walls and neatly turned wire edge provide better appearance.



## Sampling

4. The material shall be sampled in accordance with the Tentative Method of Sampling Paper and Paper Products (A.S.T.M. Designation: D 585) of the American Society for Testing Materials.<sup>4</sup>

## Test Specimens

5. Test specimens  $15 \pm 0.25$  mm. ( $0.59 \pm 0.01$  in.) in width and 10 cm. (4 in.) in length shall be cut accurately from the sample in each principal direction of the paper. The specimens shall be initially free from folds, wrinkles, or blemishes not inherent in the paper, and the area in which the flexing is to take place shall not contain any portion of the watermark. The edges of the specimens shall be clean-cut and parallel to the opposite edge. At least 10 specimens cut from each principal direction of the paper shall be tested.

## Test Conditions

6. All test specimens shall be brought to a standard condition prior to testing and all tests shall be made under standard atmospheric conditions.<sup>5</sup>

## Procedure

7. With the vertical slot of the reciprocating blade in its central position, place the specimen in the slot and fasten the ends firmly and squarely in the clamps with the surface of the specimen lying wholly within one plane. Handle the specimen by the ends and do not touch it with the hands in the region which is to be folded. Then apply the prescribed tension and fold the specimen at a uniform rate of approximately 120 double folds per minute until it is severed at the crease. Record the number of double folds required to sever the specimen.

## Report

8. The number of double folds required to sever the specimen shall be reported as Schopper folding endurance (double folds) and shall include the number of tests, and the average, maximum, and minimum number of folds for each of the principal directions of the paper. Specimens tested cut with their length in the machine direction of the paper shall be designated as "machine direction." Specimens tested with their length cut at right angles to the machine direction of the paper shall be designated as "cross machine direction." In reporting average results all digits after the first two shall be rounded off to zero.

## Method B—M. I. T. Folding Endurance<sup>6</sup>

### Apparatus

9. The apparatus shall consist of the following:

(a) *M.I.T. Tester*.—A loading clamp constrained to move without rotation in a direction perpendicular to the axis of rotation of the folding head and having its clamping surfaces in the plane of this axis. The load shall be applied through a spring attached to the loading clamp which shall be easily adjustable to provide any desired tension on the specimen from 0 to 1.5 kg. The deflection of the spring when loaded shall not be less than 17 mm. (0.67 in.) per kg.

<sup>4</sup> 1940 Supplement to Book of A.S.T.M. Standards, Part III, p. 489.  
<sup>5</sup> See the Standard Method of Conditioning Paper for Testing (T402m-41) of the Technical Association of the Pulp and Paper Industry.

<sup>6</sup> For further details of this method reference should be made to a paper by L. W. Snyder and F. T. Carson, "A Study of the M. I. T. Paper Folding Tester," Paper Trade, Journal 96, No. 22, p. 40, June 1, 1933.

An oscillating folding head which shall support two smooth, cylindrical folding surfaces parallel to, and symmetrically placed with respect to, the axis of rotation. The position of the axis of rotation shall be approximately in the common tangent plane to the two folding surfaces in the conventional design, and midway between them. The folding head shall be provided with a clamping device back of the axis of rotation and so designed that no clamping pressure is exerted nearer than  $\frac{3}{8}$  in. (3.18 mm.) to the bending axis. The rotary oscillating movement of the folding clamp shall be such as to fold the paper through an angle of  $135 \pm 5$  deg. to both right and left of the position of zero fold. Each of the two folding surfaces shall have radius of curvature of  $0.38 \pm 0.015$  mm. ( $0.015 \pm 0.001$  in.) and a length of not less than 19 mm. (0.75 in.). The distance separating the folding surfaces shall be greater than the uncompressed thickness of the paper being tested, but shall not exceed it by more than 0.25 mm. (0.01 in.).

(b) *Motor*.—A motor-driven device for imparting a rotary oscillating motion of constant period to the folding clamp.

(c) *Counter*.—A device for registering the number of double folds required to sever the specimen.

## Calibration

10. (a) All working parts of the apparatus shall be in good condition, well oiled, and in proper adjustment. Particular care shall be given to make certain that the folding edges are free from rust or dirt.

(b) Measure the plunger friction by determining the additional load required to move the plunger perceptibly when displaced under a load of 1.0 kg. or the load tension used in testing. The additional load required shall not be greater than 25 g.

(c) Measure the change in tension due to eccentricity of rotation of folding edges as follows: Place a strip of strong paper, cut in the machine direction and of the proper thickness, in the tester in the same manner in which a folding test would be made, and apply a tension of 1.0 kg. or that prescribed for the test. Rotate the folding head slowly throughout the entire folding cycle and measure the maximum change in displacement of the plunger to an accuracy of 0.1 mm. (0.004 in.). The amount of load required to produce the same displacement shall not be greater than 35 g. Measure the curvature of the folding edges by comparing suitable casts magnified in profile to standard circles.

(d) Apparatus in steady use shall be adjusted and calibrated at intervals of not more than one month.

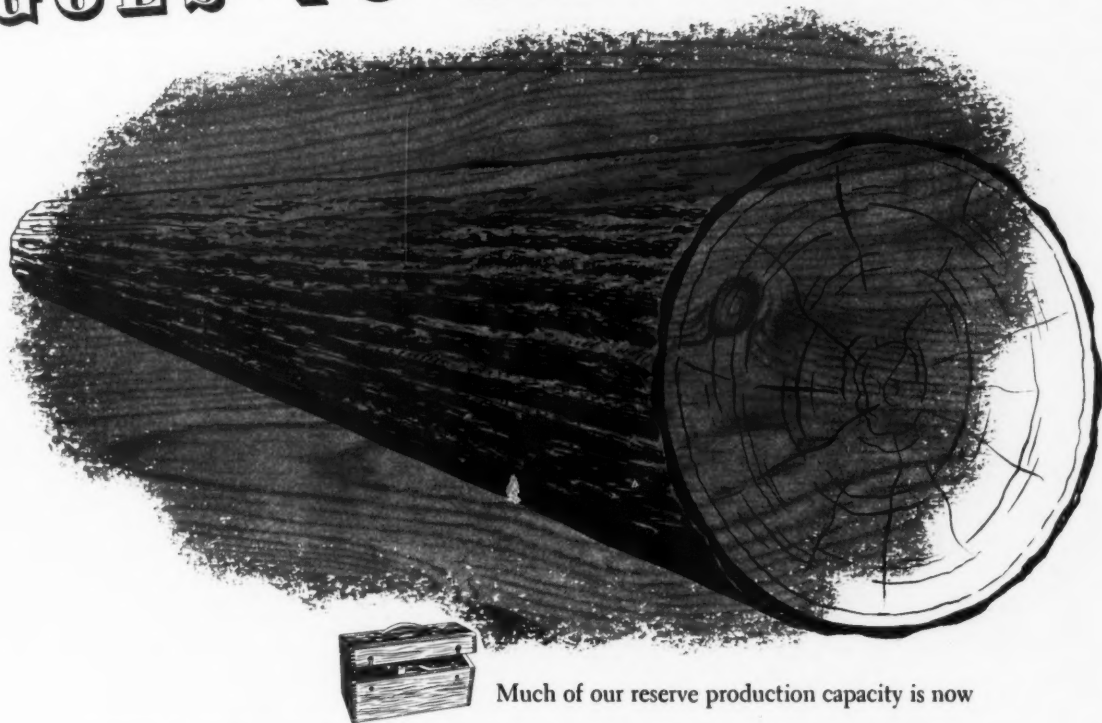
## Sampling

11. The material shall be sampled in accordance with the Tentative Method of Sampling Paper and Paper Products (A.S.T.M. Designation: D 585) of the American Society for Testing Materials.<sup>4</sup>

## Test Specimens

12. Test specimens  $15 \pm 0.25$  mm. ( $0.59 \pm 0.01$  in.) in width and at least 14 cm. (5.5 in.) in length shall be cut accurately from the sample in each principal direction of the paper. The specimens shall be initially free from folds, wrinkles, or blemishes, and the area in which the flexing is to take place shall not contain any portion of the watermark. The edges of the specimens shall be clean-cut and parallel to the opposite edge. At least 10 specimens cut from each principal direction of the paper shall be tested. (Continued on page 91)

# OUR BACKLOG GOES TO THE FRONT



Much of our reserve production capacity is now engaged in turning out "wooden soldiers." War production takes precedence. ❖ ❖ ❖ However, we are ready and able to help plan packaging strategy . . . to develop for your product a distinctive wood package employing the subtle richness of fine grain patterns to make your "counter attacks" stronger, more profitable. ❖ ❖ ❖ Wood is a flexible packaging medium in hands which have long been trained to make the most of its many possibilities. Wood is an aggressive packaging medium . . . in hands that know how to focus its natural beauty on your product. Wood is an inexpensive packaging medium . . . when specialized facilities have been set up for mass fabrication. ❖ ❖ ❖ We know these wood characteristics; we have worked with them for almost half a century. We believe we can prove them to your satisfaction and benefit . . . Why not ask Pilliod to help with your package planning?

**THE PILLIOD** CABINET COMPANY • SWANTON, OHIO

**THE FINEST PACKAGES GROW ON TREES**



# Food technologists hail dehydration

**D**ehydration, the oldest method of preserving foods, is the biggest and newest. Reborn of war necessity, it may be one of the basic factors in winning the war for America in the opinion of the food technologists, expressed in their 1942 Institute in Minneapolis, June 14 to 17. Hand in hand with dehydration of meat, vegetables, fruits and milk, come packaging victories as yet inconclusive but which forecast a trend in procedures and the use of materials likely to have a permanent influence on a peaceful world.

From the opening statement of Lieut. Col. Paul P. Logan of the U. S. Army Quartermaster Corps that food packaging is one of the most profound jobs of this struggle to the last stout answer, the convention was a challenge to science in this particular field.

Assay methods of measuring vitamin content in dehydrated foods, according to Dr. Bernard L. Oser of Food Research Laboratories, indicate that there can be good vitamin value control in factories. Processing can be done today with little deleterious effect on thiamine, riboflavin and nicotinic acid. Only ascorbic acid suffers by the process. Loss of these values in cooking was reported to be greater than in the dried state of vegetables. Dr. Oser pointed out that dehydration is essential to provide armed forces with suitable variety of nutritive foods as well as quality and palatability under adverse transportation conditions.

E. M. Chace, chairman of the U. S. Department of Agriculture committee on dehydration, confirmed this. The first World War, according to Mr. Chace, brought about the difficult problem of quick preparation of dried foods for units that moved rapidly in deserts and humid areas where refrigeration was impossible and dried foods provided the only means of supplying the men with nutritive and flavorful foods.

The toughest problem has been the processing of quick-growing, succulent vegetables not well adapted to drying, blanching, thorough washing, and extraction of sufficient moisture. In the other war, 10 per cent moisture content was set as the standard. Today moisture content must not exceed more than four or five per cent; in some cases, not more than a fourth of that. Blindfold tests for flavor in all vegetables and fruits show good results. Alkaline substances and some salts in water seriously affect vitamin content.

Highest temperature usable without scorching or de-flavoring the food is recommended for dehydrating. Streams of hot air were said to be most effective when sent through a cross-flow tunnel with an escape of extracted moisture in the center. A counter current is recommended as a finisher and is properly a slow heat at low relative humidity.

Dehydration of potatoes has given considerable trouble. Steam blanching has not proved entirely satisfactory and discoloration is a real danger at the end of the drying period. Cabbage, beets, kale—all kept a higher ascorbic acid content under steam blanching than with water. Storage at 90 degrees in sealed sanitary cans showed only 7 per cent vitamin loss in sixteen weeks and greatest loss during the first four weeks. Addition of sulphur to blanch water or as a spray afterward was found highly important. Sulphur cut vitamin C losses in cabbage (ascorbic acid) 5 to 10 per cent.

Changes in color, flavor and odor in unblanched dehydrated vegetables were said to be much the same as in un-

blanched frozen packs. Blanching is done to halt stale, hay-like flavors that develop during storage.

## Nation's reply to waste

S. C. Prescott of Massachusetts Institute of Technology cautioned against destruction of cellular structure in the process of shrinking, but hailed dehydration as the nation's reply to waste. Removal of from 50 to 80 per cent of original bulk from raw food cuts down haulage costs and shipping space. One ship can carry as many vegetables in dried state as 10 or 25 ships in the green state. Nutrition was less disturbed by dehydration than by some other processes: quality was uniform; loss from crushing and spoilage was eliminated. Surplus of one season could be carried over to the next. Another advantage at this time is the saving of metal. In a peacetime world, he believed these advantages would mean lower cost of food and transportation and improved diets.

He warned that successful dehydration meant intimate knowledge of structure, variations and changes in the composition of raw materials: enzymes, pigments, vitamin complexes and other metabolic products. Milk and eggs he cited as examples of foods that have been dehydrated successfully. Fish and meats offered alluring possibilities.

## Food packaging

Convention discussions concerning packaging dealt with current methods of substituting available materials in place of those that are scarce, such as metal containers, metal foils and rubber hydrochloride films. Rubber is no longer permissible even for military packaging.

Among the problems was that of finding materials inert to such gases as carbon dioxide and nitrogen. Glassines and parchments were not regarded as adequate to keep out gases and hold vapors. Reports were given on the progress of lacquer-coated cellophane to offer this resistance, as well as of other coatings, laminations and processes to insure proper sealing. There was a discussion of methods to eliminate cracking at the folds of materials treated with special protective coatings. Comparative water-proof advantages of asphalt and amorphous waxes were mentioned in connection with laminations. All agreed it was a mistake to test packaging materials without testing seals and closures, which are always the most ticklish problem.

E. A. Throckmorton, Container Corp. of America, told how the waxed-dipped cracker-jack carton which nobody ever paid much attention to, recently provided an inspiration for wax-dipped cartons that are solving many of today's packaging problems. Such cartons have one end sealed, are dipped inside and outside before filling. Top flaps are heat sealed after filling.

Fibre cans have been improved with a variety of linings, laminations and coatings to take the place of scarce materials in many instances. In such cases, it was pointed out that grease-proofing and vapor-proofing could not be achieved by the same materials.

Delegates were also informed of the difficulties of obtaining new machinery and were told to take good care of all existing equipment.

*(Continued on page 90)*



# UNDER FIRE

*at 50 below!*



THIS BOX drawn from crystal-clear ETHOCEL® SHEETING (0.010") was selected at random for the durability and cold test.



LOADED WITH 100 GRAMS of BB lead shot to accelerate the test, the box was ready for exposure to severe punishment seldom encountered by ordinary packages.



THEN THE TRANSPARENT box was placed in the dry ice-packed tumbling device. Temperature quickly fell to 50° below zero. The rotating drum dropped the box 10° THIRTY-FIVE times a minute!

For two long hours the transparent box withstood the severe punishment. Whirling and dropping—up and down—4200 impacts in all before this remarkable packaging material showed signs of weakening—a test of endurance far greater than any ordinary package must ever withstand!

## TOUGHNESS AT LOW TEMPERATURES MAKES ETHOCEL SHEETING OUTSTANDING

UNPRECEDENTED demands for strategic metals and other vital materials have created a great need for qualified and proven substitutes. The low temperature test described above serves to emphasize the outstanding properties found in ETHOCEL® SHEETING and graphically illustrates its adaptability

to many urgent problems. It can be specified for applications where weather conditions and service requirements are unusually severe—in the subzero temperatures of the stratosphere or the warm, humid climate of the tropics.

ETHOCEL SHEETING is made of Dow

Ethylcellulose, the lightest and toughest cellulose material commercially available. It will not crack or warp—will not become brittle with age.

Why not investigate the new and vital possibilities of ETHOCEL SHEETING for war-time applications? Write to the *Plastics Sales Division*.

### QUALIFICATIONS OF ETHOCEL SHEETING FOR WAR-TIME USES

- **Low Temperature Flexibility.** Flexible at -70° F. Toughest cellulose material commercially available.
- **Excellent Ductility.** Draws, where depth is equal to diameter, are easy to obtain. Material remains flexible after drawing.
- **Heat Resistance.** Softening Point, 300° F. Melting Point, 375° F.
- **Slow Burning Rate.** Certified by Underwriters' Laboratory.
- **Good Tensile Strength.** 10,000 lbs. per sq. inch.
- **Excellent Electrical Insulator.** Dielectric strength 3,000 volts per mil. (A. S. T. M. short time test 2,500 volts per second.)
- **Light Stability.** Fadeometer resistance more than 600 hours without embrittlement or discoloration.

\*Trade Mark Reg. U.S. Pat. Off.

### THE DOW CHEMICAL COMPANY MIDLAND, MICHIGAN

New York, St. Louis, Chicago, San Francisco, Los Angeles, Seattle, Houston

*Ethocel Sheeting*  
DOW ETHYLCELLULOSE





## Good News **FROM AUSTRALIA!**

**F**IGHTING and bombing planes in constantly increasing numbers are arriving at American bases "Down Under." And products of James Good, Inc., of Philadelphia, Pa., in constantly increasing quantities are being supplied to keep them fighting!

"Good" Castor Oil for aircraft engine lubrication, "Good" Petrolatum for light lubrication and rust prevention, and "Good" Carbon Tetrachloride for fire extinguishers . . . are all being shipped in

Crown Containers made to meet Army, Navy and Marine Corps specifications.

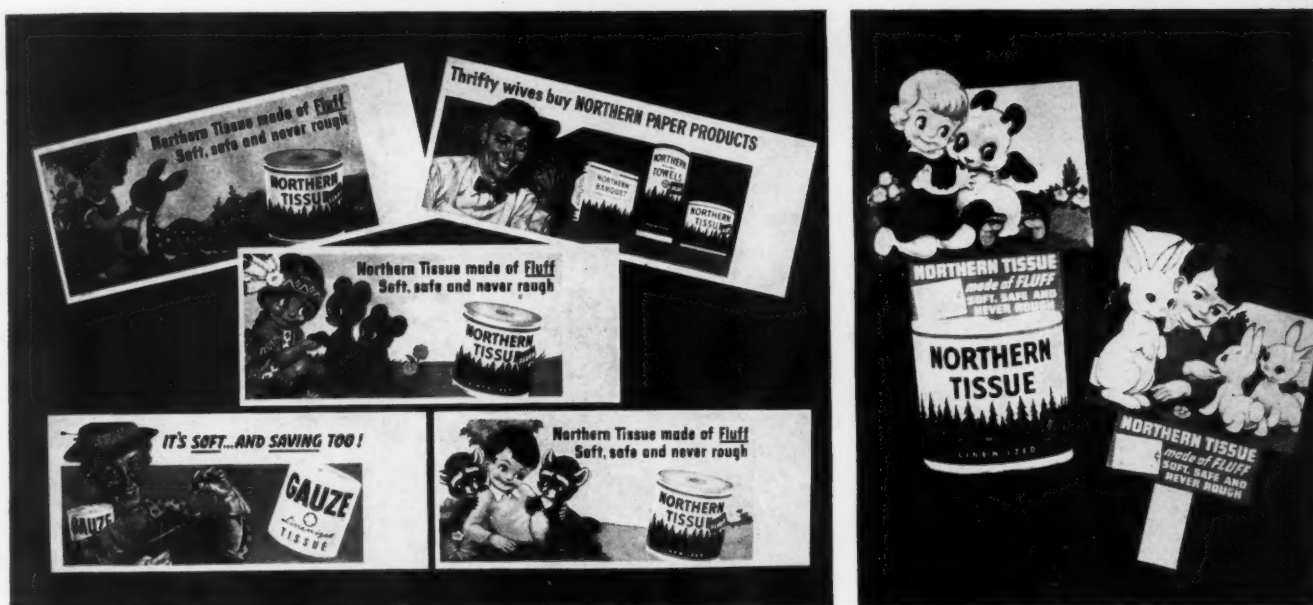
Many manufacturers in addition to James Good, Inc., have been gratified to learn that Crown containers meet rigid Government specifications without alteration.

**CROWN CAN COMPANY, PHILADELPHIA, PA.,** *Division of Crown Cork and Seal Company.* Baltimore • St. Louis • Houston • Madison • Orlando • Fort Wayne • New York • Nebraska City

INDEPENDENT AND HELPFUL

**CROWN CAN**

# MODERN DISPLAY



Posters pennants and core cards all show effective tie-in with the package.

## Picture the product

Northern Paper Mills of Green Bay, Wis., makers of Northern Tissue, paper towels, napkins and similar articles, created a successful advertising campaign by picturing their products in ingenious and colorful variation on every piece of their display material. By consistently repeating the package, the manufacturer familiarized the public with his product so that it is recognized instantly on the shelves.

The campaign started with an outdoor poster promotion using a series of appealing cartoon characters, a smiling grocer, a mother and her little girl, and a nice old lady. The company took these same designs and adapted them to a variety of point-of-sale material. Each item of the display pieces was made so that the dealer could put it up himself. On each of the pieces the packaged product or group of products was pictured in a prominent way near the dealer's sales price.

A series of seven illustrations carries the slogan, "Northern Tissue made of *Fluff*, Soft, safe and never rough," or similar words. A little Indian girl with several tiny ducks, a boy with pert baby rabbits, a youngster with baby kangaroos are among the characters created by the Walt Disney studios in their inimitable style and used on the company's displays. All these pictures, of course, create the inevitable mental association that people have with all young things—that of softness, fluff, pleasant to touch—so that picture and slogan and package tie into a unified advertising theme. Another aspect of the promotional theme is emphasized in other illustrations. These are the pictures of the smiling grocer who says, "Thrifty wives buy Northern Paper Products," the mother who is putting a coin in her daughter's pig bank, and the lady who looks over her (Continued on page 89)

(Page 61)





# DISPLAY GALLERY



**1** A. Stein & Co. have adopted this colorful cowboy piece to promote the sale of their Westerns by Paris belts. The figure in his leather *chaps* and ten-gallon hat is molded from a plaster-like composition and is done in natural colors. An actual lariat forms the loop encircling the belts. The rest of the unit is fabricated of wood with the copy processed in oil colors. The display takes little space on the counter and because the actual product is included, the unit has special appeal for dealers. Made by Hartwig Studios, Inc.

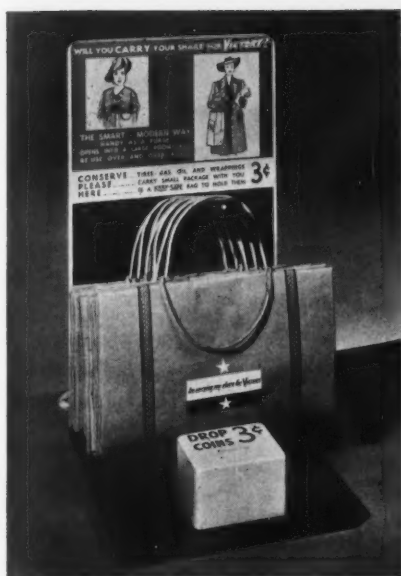
**2** The two winning windows in Jaquet's national window-display contest, designed to promote "Fire Magic," its new lipstick and face powder, reflect very different handling of the same items. Top: The window in the Broadway Dept. Store, Inc., Los Angeles, was awarded first prize. Display concentrates dramatically on the name and meaning of "Fire Magic," and is effective in selling the idea to the public. The center card, describing the lipstick, is bold and compelling, while the kneeling Indian accents the theme of the whole window. Bottom: Second prize winner was the window of Saks Fifth Ave., New York City, which reflects the beauty-fashion tie-up with the cosmetics. Because the items to be displayed are small, the window is treated in scale. The smokescript writing on the central glass panel and the arrangement of the lipsticks to form the initials "F. M." are particularly effective. The jeweled model of an Indian figure represents the artist's version of the old cigar-store Indian. It stands about three inches high and is modeled of semi-gold and semi-precious metals. An interesting point is that the combination of one green and one red plume was one of the first indications to the current trend of combining these two colors in fashions, and the color combination was also followed in the display with hats, featured in the Saks Fifth Ave. window in New York City.



**3** The Hanley bulldog, trade-mark character of the James Hanley Brewing Co., well known throughout New England, is featured in a new series of displays. Combined with sparkling direct color photographs of the food, the pieces have high appetite appeal and immediate consumer recognition. The illustration on the upright cut-out top piece is repeated in a lower panel together with plates of appetizing sandwiches and the different sizes and types of bottles for Hanley's ale. Display by Einson-Freeman Co., Inc.







4



5

4 "I'm carrying my share for victory" campaign has brought the modest shopping bag into the limelight. Kary-Safe Paper Bag Co., Inc., have made up this display stand in patriotic colors and use it to merchandise the company's handy Kary-Safe Pocketbook Merchandise Bag. Placed at strategic points throughout stores, these shopping bag displays afford customers a real service—just drop three cents in the coin box and take a bag.

5 Here is an attractive girl who is found just putting a box of Alka-Seltzer in her purse. The poster has all the appeal of a camera action-shot and requires a minimum of copy to convey its sales message. The figure is life size and is lithographed in full color. It serves as a direct dramatic suggestion to shoppers in drug stores to purchase a box of Alka-Seltzer. Made by Forbes Lithograph Mfg. Co.

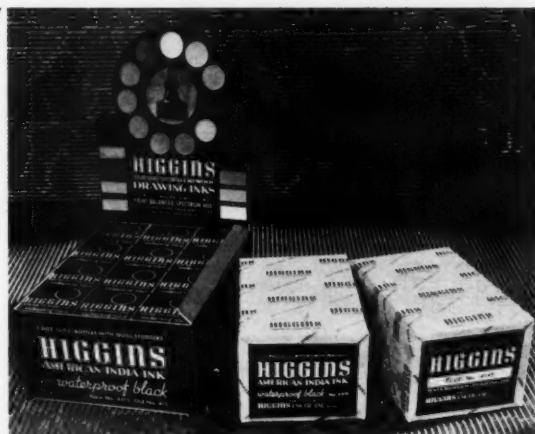
6 Mavis swing girl window display is a mechanical motion cut-out. Against the brilliant red of the Mavis can, 42 in. high, stands the swing girl, painted by Petty. The display is in 11 colors and is varnished in a high gloss finish. It comes fully equipped with mechanical motion. The swing girl tells the product story in a minimum of words. V. Vivaudou, Inc., makers of Mavis products, also have available for their dealers this same swing girl in a push motion counter display that's an exact replica of the mechanical motion unit. Made by Snyder & Black, Inc.

7 For years the Higgins Ink Co. packed one dozen cartons in a display container. A survey, however, proved that only a minimum of dealers used the container for its display value. The new package shown at the right in the photograph halves this quantity and the company finds that many dealers who were unable to order certain colors in dozen quantities respond readily to the inviting half-dozen packing in printed kraft wrapper with label. The package for six units is easy to handle and keeps stock clean until sold. Kraft wrap by Bauer Paper Co. Labels by Frank Collyer.

8 Frank H. Flee Corp. presents a new wartime economy display box and dispenser for Dubble Bubble Gum. In construction extreme economy of material is attained, yet the result is an entirely adequate shipper, display and dispenser. Because it is compact, it saves counter space. Simple construction makes it easy for the dealer to set it up. A feature of the design is the drop front. Designed and made by Robert Gair Co., Inc.

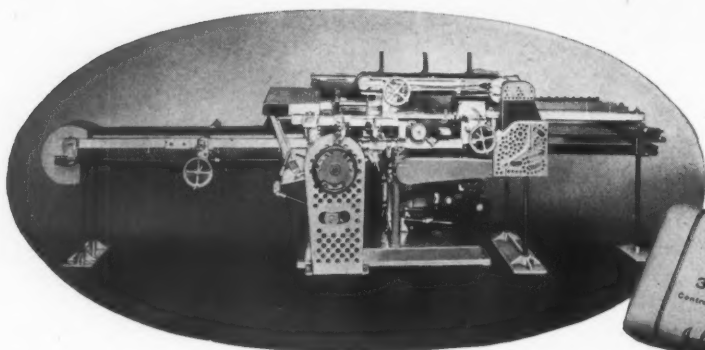


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8





## WRAPPING MACHINES essential to our WAR EFFORT

Our wrapping machines already in the field are playing an important part in supplying goods for our armed forces . . . And we are now working on orders for new machines to meet additional demands . . . Our famous adjustable Model FA, for example, has been selected to wrap the products shown here. Orders for other types of machines are also being filled.

If machine-wrapping will assist you in stepping up the output of goods that are important to the Nation's program, call on us. We have over 70 different models which meet practically every wrapping requirement.

### Getting the most out of your present machines

You can also count on us to give you every assistance in keeping your present wrapping equipment in high gear, and in finding substitutes for methods or materials which may have to be discontinued.

Couple your ability with ours in the effort for early VICTORY. Bring your problems to our nearest office.

### PACKAGE MACHINERY COMPANY

Springfield, Massachusetts

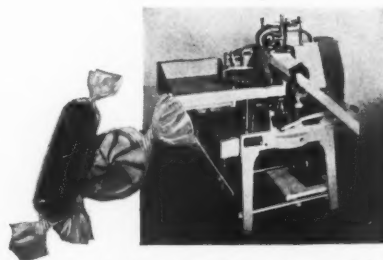
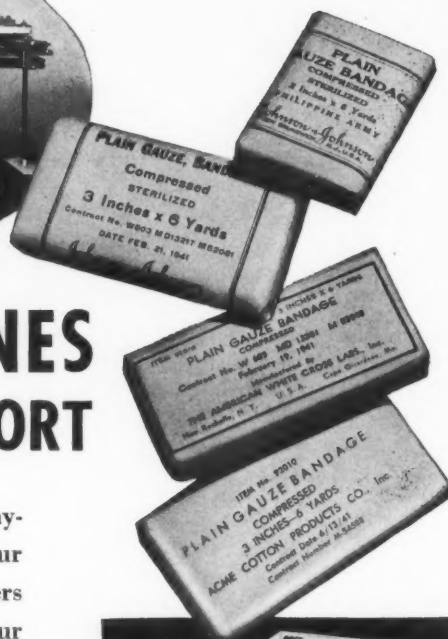
NEW YORK CHICAGO CLEVELAND LOS ANGELES TORONTO

Mexico: Agencia Comercial Anahuac, Apartado 2303, Mexico, D.F.

Argentina: David H. Orton, Maipu 231, Buenos Aires

England: Baker Perkins, Ltd., Peterborough

Australia: Baker Perkins, Pty., Ltd., Melbourne



Tons of hard candy for Army rations are being wrapped on 22-B machines. Each piece is wrapped in moisture-proof material—ends are heat-sealed to prevent deterioration. One operator can wrap 150 pieces per minute.

## PACKAGE MACHINERY COMPANY

Over a Quarter Billion Packages per day are wrapped on our Machines

# PACKAGING PRODUCTION and TECHNIQUE

## March of machines

Usually Modern Packaging's machinery articles are exact, specific, terse, concrete, illustrated by blueprints, working drawings, and specifications.

This one will be different—because the times are different. It will deal with the sweat of service and the hopes of the future. It will treat of abstract subjects like enthusiasm, determination, optimism and patriotism!

Because that is the picture as one finds it today among package machinery manufacturers. Among the very first to be drafted for war production, they quickly recognized that business would not be as usual until the world was rid of Nazi and Fascist gangsters. Today the package machinery manufacturer is 60 to 99 per cent engaged in direct war production.

"Peacetime productions," wrote an English package machinery executive, "have ceased, both for home and export. The feeling among our people is such that if they were asked to do anything but munition work they would refuse, and in any case, the government has laid it down that every machine tool must be working night and day on nothing but munitions. We have the hardest work even to supply spare parts and to undertake repairs of existing machines. We can do little in the way of development for post-war trade. I expect you are in the same boat. Anyhow, God knows when the post-war time will come. It looks like a hell of a long war and it may be our successors who will be worrying about new developments!"

That letter was written to an American friend in the same line of business at a time when the outlook for the United Nations was black and discouraging. Those black days have had a profound effect on America's attitude reflected even in the tone of advertisements. For example, an advertisement of Wright's Automatic Tobacco Packing Machine Co. arouses a stir of emotion with these words:

"Americans will never allow their boys to goose-step to the whims of Austrian house painters. Freedom—150 years of it—is too deeply ingrained in our hearts. We at Wright's are mad—and we are saying it with action that promises disaster to the evil trio and their stooges. Action here takes the form of production—every minute of every day, and we are sorry that there are only 1,440 each week to devote to our God-given task."

There has been a noticeable transformation, too, in the attitude of the rank and file of shop workers. One package machinery manufacturer pointed out that before Pearl Harbor his men were inclined





to be critical of government business—but not now. Since some of their own families and the sons and relatives of their friends have entered the armed forces, these shop workers have gone “all out” in wholehearted devotion to the cause. Typifying this attitude, says this manufacturer, 96½ per cent of their employees, without pressure of any kind, enthusiastically signed up for the payroll deduction plan to purchase war bonds.

Nevertheless, current preoccupation with war work does not interfere with the machinery manufacturer's determina-



tion to devote his best thought and effort to serving his regular trade, that is, the packagers of foods, pharmaceuticals, confections and the thousand and one products which in packaged form are distributed to the far corners of the globe. It does not disturb either side that this involves something of a reversal of the customary attitude. Durable goods, from the standpoint of the seller, have been just too durable. The buyer has welcomed the rapid improvements and new models developed by the inventive genius of the machinery manufacturer. Generous depreciation rates have permitted easy replacements long before the machinery has worn out—obsolescence has meant not a worn-out condition, but an out-of-date condition due to the existence of improved models.

But now the maker spends his advertising appropriation to educate erstwhile customers how to make their machinery last and sales meetings have been transformed into classes where the men who now have nothing to sell to their regular customers are shown how to serve those customers better by increasing the life of machinery and changing it over to handle new materials. Concrete instances follow:

Horix Mfg. Co. wrote: “We are having our sales and service representatives contact our customers as frequently as possible, inspect our equipment and offer specific suggestions how to maintain it. So strongly do we believe in proper maintenance that we have ourselves signed maintenance contracts for continuous service on machines such as office equipment installed in our own shop. While it has not proved possible to offer our customers a standardized maintenance contract, our representatives are being urged to discuss such an arrangement with our customers, offering each, where practical, a service to suit the customer's particular requirements.”

Economic Machinery Co., in a practical and useful booklet entitled, “Liberty and Labeling,” gave this admonition: “Take good care of your labelers and they will continue to take good care of your needs. Don't take it for granted that the following simple procedures are carried out faithfully and constantly in your shop, just because you recognize them as ordinary common sense practices. Make sure that someone responsible follows through and gets them done.”

“No machine user can go very far wrong if he heeds four principal admonitions,” wrote the Miller Wrapping & Sealing Machine Co. “Clean your machinery—oil it—repair it—don't overtax it. Failure to heed these four simple rules may result in serious regrets in months to come. For the time being at least we Americans cannot discard old machinery casually and replace it with new and better equipment. We must be thrifty and frugal on a scale that most of us have

never before known and make the best possible use of what we already have.”

The same thought was echoed by the New Jersey Machine Corp.: “Adopt that good old economy principle which dominated the depression-day practices. Examine every requisition with a microscope to see if the expenditure can be avoided, or use extra care in maintenance to give longer wear to a piece of equipment.”

Package Machinery Co. pointed out that “making machinery last is a purely mechanical problem in the hands of superintendents and maintenance men whose care of machinery depends on the amount of money they have for the purpose and upon their own interest in and love for equipment. Most of the small ones at least are handicapped by the lack of both of these.”

Stokes & Smith Co. advise the machinery user “to have a service man from the machine manufacturer make regular inspections and adjustments because it is often better to go to a doctor before you are sick than to wait until you need an operation, so ‘care for your machine to make it last.’”

“Every Redington machine,” wrote the maker of that line, “is worthy of having at least one intelligent member of the user's organization on intimate terms with its operation. It takes a good man to make such a study and use intelligently what he has learned from it. Our machines are accompanied by a carefully prepared story which deserves careful study.”

Pneumatic Scale Co., in its advertising, is featuring a trade character which they have named “Speed” Production. One month he will enjoin the reader to “Keep those glue rolls clean.” Later he will warn the user to “Keep air and liquid lines tight.”

Consolidated Packaging Machinery Co. reminded us that we had reported H. H. Leonard's six suggestions he delivered at the Packaging Conference in April. These are worth repeating: (1) Put all repair parts in stockroom under strict stock keeper's control. (2) Do not permit repair parts to be issued without competent inspection to see if old parts cannot be used longer. (3) Keep machines properly adjusted, lubricated, cleaned and inspect them frequently; lubricate gears. (4) Inform operators of the need for extra care. (5) Study past repair records; offer bonus payments for avoiding repair bills. (6) Don't hoard repair parts.

### New installations

Installations of new machinery are very scarce. What else can be expected, with all machinery manufactured under priorities control? In the case of what few new installations there are, sometimes a very natural reticence about publicity is manifested by the fortunate few. “Why should we brag about our good luck,” wrote one fortunate machinery buyer, “and make everybody else hate us? They won't believe that we had this machinery on order a long time before priorities were invented.” When new machinery is almost impossible to obtain, reluctance to talk about recent installations is understandable.

Important news is being made, however, in the adaptation of packaging machinery to use types of material currently plentiful in place of materials for which the equipment was built. Commonest of these changes is from tin to glass. One machinery manufacturer points out that if the glass container can be made of a shape similar to a can and with an opening nearly the same size as a can, then in most cases filling and packaging equipment can easily be changed over for the glass containers. Many types of cartons are being used very satisfactorily in place of metal containers. Where top and bottom sealed cartons are used in place of cans, the additional opera-



tion of sealing the cartons in some cases requires the addition of sealing devices and equipment. It has been found, too, that many products which require extra tightness or extra protection have satisfied those requirements through the use of treated cardboard cartons with an outside tight-wrap of treated or varnished paper.

Many changeovers of this nature can easily be made and stock models are being so adapted constantly, according to reports from machinery manufacturers. Indeed, many of them have always emphasized the easy adaptability of their equipment. One manufacturer uses the catch phrase, "Our change parts are petty cash items." Another points out that in the case of their stock capping machines, only minor adjustments are required to enable that equipment to handle plastic instead of metal caps. In a great many instances, these change parts are not at all visible to the uninitiated; nevertheless nowadays adaptability and versatility of packaging machinery is certainly proving an important asset.

Users of package machinery are appreciating, as never before, the intelligent engineering and technical service available from their machinery manufacturers. One important food producer expressed it thus: "We were stumped by the foil order and didn't know where to turn. Our machinery was new and highly efficient. When we conferred with the maker, he was able to suggest a foil substitute which operated perfectly after minor readjustments on our equipment." This policy is consciously and definitely followed by more than one machinery manufacturer with obvious benefits to both sides. In some instances, it will be possible to return easily and quickly to the former material when that again becomes available. In other cases, the superiority of the alternate material will result in its permanent adoption.

### Rebuilding machinery

Interesting cases of the rebuilding of machinery or its adaptation to new materials have been reported by both customers and manufacturers. The Pneumatic Scale Co. is completely overhauling four of its combination carton machines which General Mills formerly used to pack breakfast cereals, corn starch and dessert preparations. On completion they will be put into service, packaging dried eggs to help satisfy the enormous requirements of the Lend-Lease program. Although the machines will be completely reconditioned, the only noticeable change in their appearance will be the filler which will be of an entirely new augur feed type. Other changes would not be noticed by the tyro though the machines will all be torn down and readapted for different sized packages.

The United States Playing Card Co. has commissioned F. B. Redington Co. to adapt a cellophane wrapping machine, built several years ago, to the present situation. An unusual feature of their packaging was a blank card, showing the back design, placed on the box under the cellophane protecting the design but permitting visibility. Now they have been prohibited the use of cellophane and the machine is being adapted to accomplish the operation of making the card adhere to the box to give the same visibility without the cellophane wrap.

Excello, Ltd., formerly wrapped their packages of six and ten individual kitchen towels in moisture-proof, heat-sealing cellophane with an individual inner label for identification. Many of the towels, including a "Day Of The Week Set," were in brilliant color and made a beautiful display in transparent wrapping. The Cellophane Order seemed at first to be a serious blow. However, they located a translucent parchment paper which permitted quite a high degree of visibility when the wrapper was pressed tightly on the towels. The

inner label was placed outside to maintain identity. The Miller Wrapping & Sealing Machine Co., who built the original machines, converted them to use the new material by adding a gluing mechanism which glue-seals the translucent parchment. If and when they are able to go back to cellophane, the machine will still be usable for heat-sealing.

Elsewhere in this issue will be found the story of machinery and material changes made by Bristol-Myers Co. for a number of their products.

The Horix Mfg. Co. reports specific conversions recently made for S. C. Johnson & Son and the Coca-Cola Co., both of which had installed high-speed machines originally designed and built for filling cans. These machines were converted to handle glass by the installation of necessary change parts, including filling valves which were required for the smaller neck openings in the glass containers. In both cases the customer kept the valves and change parts from the original installation, against possible use for future return to the former method of packaging.

The ingenuity of the package machinery man continues to operate "in the groove" despite almost full-time war work. The Consolidated Packaging Machinery Co., activated by one of their alert sales engineers, developed a machine for a pharmaceutical company to perform an operation always hitherto done by hand. The sales engineer observed this hand operation in the customer's packaging department—the insertion of a wad of cotton in bottles containing hygroscopic products. This operation challenged his imagination. The outcome was a machine which has proved so successful, additional ones have been ordered.

Machinery makers are meeting the challenge of devising equipment to handle radically different materials. In some cases, this means merely change parts as in the case of New Jersey Machine Co. revamping their labeling machines for A. E. Staley's syrup packages, or devising equipment for labeling jars of J. B. Williams' Shaving Cream, hitherto packed in tubes. The Amsco Packaging Machinery Co., by



the addition of new parts on their "roto-krimp" sealer, have developed virtually a new high-speed automatic sealing machine, capable of handling various kinds of paper recently on the market, but which were not handled previously.

Any review of this kind must always contain a look into the future; particularly is this important today. Most machinery men express a cautious optimism, though an occasional gloomy note is sounded. One manufacturer foresees an inevitable over-production, preceded, he admits, by two or three years of good business immediately after the war is over. The vast quantity of production machinery called into being by the war effort, however, simply won't be kept busy enough in normal times to avert depression.

"Our planning for the future," said another manufacturer, "is based on the principle that we must act now so that there will be a future! We must devote ourselves to the war effort as our primary job today."

"There is practically no civilian economy today," said another. "With 90 per cent of our production effort going for war purposes, we can't look too far ahead."

The machinery manufacturer always has looked ahead.

Even in the most placid times manufacturers of durable goods must of necessity plan far into the future. This is in contrast with producers in other lines whose production cycle is rapid and who enjoy a quick turnover. For instance, the food manufacturer may have a stock turn that ranges from 12 to 50 times a year. On the other hand, the machinery manufacturer often carries raw materials for several years. Instances are frequent in which at least three years may elapse from the time negotiations begin to the delivery of the finished machine. This period averages perhaps six to seven months. This obliges the machinery manufacturer to watch future trends most carefully and reduce his margin of error to a minimum.

It is perfectly safe to predict that packaging production will undergo changes due to the development of new materials—but just what will these materials be? Already more than one manufacturer has said there has been a lifetime of activity in the few months since shortages began to manifest themselves. The machinery manufacturer must be ready with equipment that can handle coated papers of various kinds, new types of metal foil, new kinds of plastics and new containers of an infinite variety.

So dependent on the machinery man is the average packager that he expects his package machinery builder to possess clairvoyant powers and omnipotent ability. One irate customer informed his machinery supplier that it was his duty to look ahead and foretell just what priorities orders were going to be issued for months in advance and guide his customers accordingly. Another customer advised his machinery source to advertise and buy up all the available used packaging machinery to sell to those who needed it. He overlooked the little detail that Order L-83 prohibits the sale, loan or lease of any rebuilt machines, and also forbids buying for re-sale. Direct sales from one user to another are permitted, but machinery manufacturers must not be parties to such sales. Because of situations like these, one machinery man predicts, bootlegging operations are likely to set in.

### Improvements for future

Engineering and sales organizations are being kept intact—in itself convincing evidence of confidence in the future. These departments are working on concrete problems which will eventually take form in new and improved machinery, but no manufacturer today is disclosing details about what those machines will look like or what they will do. "As we can spare the time from essential war work," said one manufacturer, "our engineering department is busy not only seeking available substitutes for hard-to-obtain materials, but also considering improvements and changes in design that will be available to our customers when conditions make it practical for us to put them on the market."

"All construction on new models has, of course, stopped," another manufacturer told us, "but we still have a few brains and pencil and paper, so the drafting room can do its stuff. Now, naturally enough, we are guessing what the demands for wrapping machines will be, if we are still in the wrapping machine business. On the strength of those guesses, we are designing machines to fill prospective wants."

In passing, it should be noted that the government has instructed machinery manufacturers to keep their engineers and draftsmen working on the actual and immediate requirements of war work so far as the expediting of that work requires their efforts, but the package machinery man realizes that there will be much rebuilding to do after the war is over, with consequent demand for equipment and materials of all kinds.

Therefore, as one machinery man expressed it, "It is important for the far-sighted manufacturer, especially in the line of equipment, to have something to offer that will be just a little better than previously offered."

Significant is the fact that "smart and convincing advertising" is playing an important part in plans for the future, as well as—to quote a phrase from another manufacturer's letter—"research to provide a reservoir of new developments that can be tapped for exploitation in the post-war period." He elaborated in these words, "We have already started on our research plan and are thinking seriously of an advertising campaign which will get under way this fall to help sell the facilities and abilities of our organization to men who will be interested in such things after the war is over. We want to broaden public knowledge of these abilities and facilities."

### Post-war plans

Machinery men feel that the industry will have more efficient service to offer their customers after the war. "War activity," said one, "is opening up new channels and giving rise to new ideas. Many things that are being done now under pressure of war production will show procedures which can be put into practice in later peacetime activities." This man frankly admitted that his company's present activity shows more than double the production of normal times with only a small increase in personnel—the results of better planning and more efficient handling. These gains will be retained and passed on to customers later.

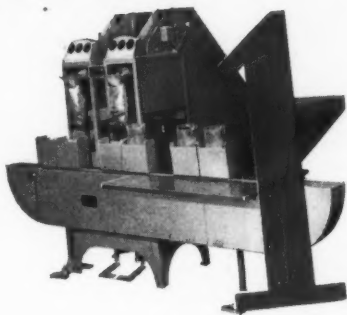
The machinery engineer is no crystal gazer, but because of his need for long-range planning he is well equipped to evaluate and measure the force of economic trends. The observable trends, according to the consensus of machinery men, indicate that business activity will be at a high rate after the war. A summary of their analyses may be helpful:

1. An enormous reservoir of demand is being built up today. People can't buy hundreds of things they want and would ordinarily get.
2. We'll have a big share of the responsibility of rebuilding, feeding and clothing the rest of the world when the war ends. Regardless of how that job is financed, it can only mean more production activity for our country.
3. The aggressor nations will have to be policed perhaps for years to come, for never again will we submit to wholesale murder and destruction. The policing activity will call for man-power, hence it cannot be expected that there will be a surplus of labor.
4. There will be plenty of money. Not only will income be at a high level because of conditions just outlined, but there will be a huge accumulation of money in the hands of non-habitual savers who have been buying war bonds. Once the restrictions are removed, that money will burn holes in their pockets. The spender of tomorrow will be just as patriotic as the saver of today, because his spending will keep peacetime business going.
5. Many new activities will come into being. For instance, airlines will develop freight and passenger transportation on an unprecedented scale. There will be no lack of low-cost raw materials—metals, plastics, glass, paper, etc.—to insure moderate prices for goods and services which are restricted now.

"Don't lose sight of some of the adverse factors," one machinery manufacturer warned. He called attention to the many years of high taxes ahead. Another stressed the difficulty, in the chaos of reconstruction, of maintaining a liquid position, while a third foresaw (*Continued on page 91*)

# a 3 Point Program

*To help you meet Wartime Packaging Problems!*



**Priority Packaging.** Companies that can secure priorities for packaging machinery to handle dry materials can get prompt delivery on most models of Triangle automatic and semi-automatic Weighers, Fillers, Carton Sealers Auger Packers and other equipment. Producers of dehydrated vegetables, egg powders, chemicals and many other strategic products are making use of their priority ratings to get packaging equipment that will speed up production and release workers for other tasks. If you fit this picture, don't fail to consult Triangle on equipment for the job.



**Non Priority Packaging.** Some plants must of necessity forego for the duration the benefits of packaging equipment. But if this is your situation, you may not have to go completely without new packaging machinery. You can still get, without priorities, certain models of Triangle equipment including small fillers, carton gluers and various accessory equipment which will greatly aid in stepping up production, lowering costs and saving labor. These units are low in price (\$200.00 or less), use an extremely small amount of metals and are available without priority as long as our supply of material lasts.



**Munitions Packaging.** Triangle, with long experience in developing newer, better labor-saving machines is now busily engaged producing machines for Munitions Packaging for the U. S. Army. At the same time facilities are available to maintain production of the normal line of equipment which is in many cases equally important to the war effort.

WHAT'S your packaging situation? There's a good chance Triangle can help you. Write today.

## TRIANGLE PACKAGE MACHINERY CO.

908 NO. SPAULDING AVENUE, CHICAGO





*Western Sugar Refinery in San Francisco with the famous bridge over the bay in the background.*

## Sugar takes to small cartons

The copy writer who indulged in such superlatives as "glistening diamond-like surfaces" and "jewel-like crystals" had in mind, not some luxury article of personal adornment, but a lump of sugar.

The "Sparkling Tablet," to name only one of the packaged sugar specialties to which the imaginative copy writer referred, has been declared by some epicures to be the "most beautiful sugar in America." Molded or baked into various shapes and sizes to meet individual consumer needs, this and the other specialized cube sugars are products of characteristically American mass-production and enterprise.

Their processing and packaging represent an important development in the field of packaged foods, particularly since the growing number of specialized sugar tablets, cubes and cut loafs are merchandised wholly in compact consumer packages. Some of the solid sugars, such as the tablets, are merchandised in individual wraps similar to chocolates and other choice confectionery. Especially now, with wartime restrictions on consumer consumption, the 1- and 2-lb. packages of the choicest sugar products are finding a ready welcome in American homes all over the country.

Back in 1863, when Claus Spreckels founded a sugar refinery in San Francisco, forerunner of the Western Sugar Refinery, he not only introduced new methods of refining raw sugar, but was also first to introduce cube sugar to the American market. Having learned the art of sugar making during an apprenticeship on the Continent, the pioneer sugar maker subsequently improved upon and developed new processes, some of which have been adopted by refiners throughout the world.

Of the various cube sugars now processed and packaged in the large San Francisco refinery, the "Sparkling Tablets" represent a relatively recent processing and packaging development. As a luxury item they are "tops," from the standpoint of appearance, quality and packaging appeal. They are made by an exclusive process developed in the San Francisco refinery. The individually wrapped tablets, bearing the "Sea Island Sugar" label or the names of exclusive hotels, restaurants, clubs and similar establishments, are extremely popular and steadily becoming more so. The tablets are packed in the 1- and 2-lb. cartons, with an average of 96 tablets to the pound, and are a favorite with the hostess

(Page 70)



1. Group of packaged Sea Island Sugar products. Photographs show cartons of brown sugar, cocktail cubes, granulated, demi-cubes, sparkling tablets and instant dissolving; and a bag of granulated sugar.



2. Opening bags of raw sugar as they come into the refinery. 3. Cubes on way to baking oven are inspected for uniform size. 4. Slab of sugar being fed into chipping machine to be made into tablets. 5. Sugar tablet molding machine and conveyor for feeding slabs to chipping machine in foreground. Note how solid slabs are stacked for feeding to machine. 6. Sugar tablet chipping machine, where sugar is sliced-by saws, then chipped into tablets. At end of the line the tablets flow into container held by attendant. Containers then go on to packaging line.

who desires something really distinctive for table service.

The solid sugars are not only of different sizes and shapes, but are processed in various degrees of hardness and solubility for the discriminating sugar consumer. The extra hard cube is made to order for the epicure who indulges in the luxury of sipping his coffee through sugar held between teeth. The fact that the extra hard cube dissolves slowly prolongs his coffee drinking enjoyment. Cocktail cubes, on the other hand, dissolve very rapidly, making them ideal for cocktail service. They are also the smallest cubes produced by the refinery.

Other specialized cubes are the demi-cubes for demi-tasse service, the regular table service cubes which dissolve easily and split readily, the cut loaf, distinguished by a coarser grain than the cube, and so forth. In all, the "Sea Island Sugar" packaged brand is now available for a score of different varieties and in a range of about 125 different sized packages, including those for the various grades of granulated and powdered sugars.

As with the mechanical processing of these specialized products, the packaging operations have presented certain problems, among them that of obtaining perfect uniformity of quality and size. In the matter of packaging, several different types of mechanical equipment are employed, one for the cubes and another for the tablets, since the latter are individually wrapped in addition to being placed in cartons. In both operations inspection is very important and it is a detail that receives considerable attention.

Both the cubes and the tablets are manufactured from granulated sugar. They are not, as might be supposed by the layman, part of a cane sugar refining process. Rather, the process, whether it be molding the tablets or baking the cubes, follows after completion of the refining operation. The raw sugar, received in the refinery, goes through four major refining steps to obtain a finished product for conversion into cubes and tablets.

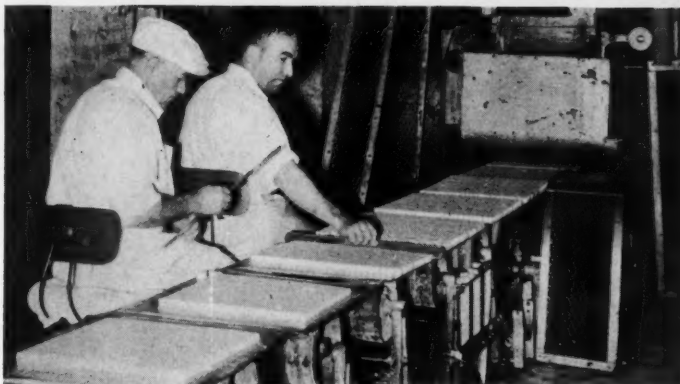
In the first step the raw sugar is mixed with a supersaturated solution of sugar liquor, so that it becomes a free-flowing liquid mass. The mixture is then directed through rapidly revolving centrifugal tanks, resulting in separation of sugar from impurities. Clarifying, the next step, is accomplished by dissolving sugar in hot water and then filtering in special filters. Even then the sugar is of a brown color. Decolorizing, the third step, is accomplished by passing the sugar solution through bone-char filter material, which effectively removes both color and impurities. In the final step, crystallization, water is evaporated from sugar mixture by passing it through steam-heated vacuum pans and then placing the material in centrifugal machines for removal of any remaining syrup.

Thoroughly dried by passing through revolving drums, then put through screens to take out lumps and dust grains, the sugar is ready for the packaging line or for conversion in cube and tablet forms. For the former, a cylinder opera-

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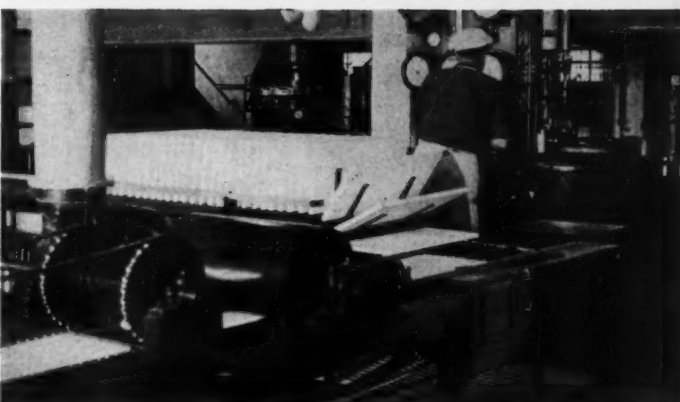
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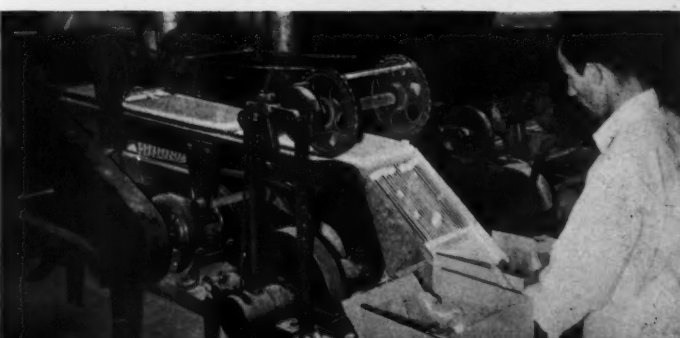
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7 tion is used. It is necessary, first of all, to mix the refined sugar with a certain amount of sugar syrup, the quantity used depending on the degree of cube sugar hardness desired. For the extra hard cubes a proportionately larger amount of syrup is used and the baking period is prolonged.

The sugar mixture falls into cube-shaped openings in the revolving cylinder. The opening sizes vary for the regular cubes and the cocktail cubes. As the drum revolves, the pressed cubes emerge on a moving belt line ready for the next step—baking.

In ovens the cubes are first heated at a temperature of 180 deg. Fahrenheit, but to avoid blistering the sugar grains, this is soon dropped to 160 or 165 deg. Baking time varies, for the extra hard cubes requiring anywhere from 14 to 18 hours, for the regular cubes from 4 to 8 hours. From 4 to 6 tests an hour are taken while the cubes are being baked to make sure that the sugar crystals are cementing properly and that there are no imperfections in size and form.

One of the things guarded against in the baking process is excessive evaporation. In the case of extra hard cubes, which utilize relatively larger quantities of cementing syrup, more evaporation is apt to occur, but this is usually held down to no more than  $1\frac{1}{2}$  per cent. For the regular cubes, evaporation does not exceed three-fourths of a per cent.

The baked cubes, moved on belts from oven to the packaging line, pass through a tunnel before dropping into cartons. Protruding grains are automatically removed. Packaging attendants remove chipped or broken cubes, the inspection at this point being very rigid. Every tenth carton is check-weighed, as a final check-up on accuracy.

The "Sparkling Tablets," of coarser grain than the cubes, are molded instead of baked, by a process especially developed in the Western Sugar Refinery. Granulated sugar, fed with the required quantity of pure syrup into a large mold, comes out as solid slabs which are then chipped by mechanical means to form small tablets.

In this, as in the cube baking process, there are three important production requirements. First, the crystals must be molded firmly to form a compact, uniformly shaped body. Second, each tablet must have uniform dissolving quality. And finally, there must be no variation in weight of each tablet. Selection of high-grade sugar syrup for cementing the crystals is of primary importance. And it must have an exceptionally high color test rating to produce snow-white cubes and sparkling tablets.

When the syrup, known in the refinery as X Liquor with a color test rating of 4, is mixed with granulated sugar in correct proportions, then pressed together, heated and dried, the product formed is a 7-lb. slab 22 in. long and 10 in. wide. From a single slab are produced 600 tablets, each measuring  $\frac{11}{16}$  by  $1\frac{3}{8}$  by  $\frac{6}{16}$  in.—enough to pack seven 1-lb. cartons. A single molding machine operation produces 24 such slabs, with a pack of 168 1-lb. cartons, or a lesser quantity of 2-lb. cartons in the same proportion.

First operation is to feed granulated sugar to the 24 slab molds in the big molding machine, followed by a vibrating operation which lasts 27 seconds to (Continued on page 92)

10 7. Before being individually wrapped, tablets are inspected to eliminate imperfect pieces. Inspector then places tablets on moving line to packaging unit. 8. Individually wrapped tablets are assembled in a form for transfer to carton. 9. The end of the packaging line for cube and tablet sugar, showing minute inspection before cartons are sealed. 10. Section where granulated sugar cartons are filled, weighed and sealed.



# is the GOOD LUCK number!

● For, up to 70 packages per minute is the production of the Stokes and Smith Packaging Line used by the GOOD LUCK FOOD CO., Inc., Rochester, N. Y.!

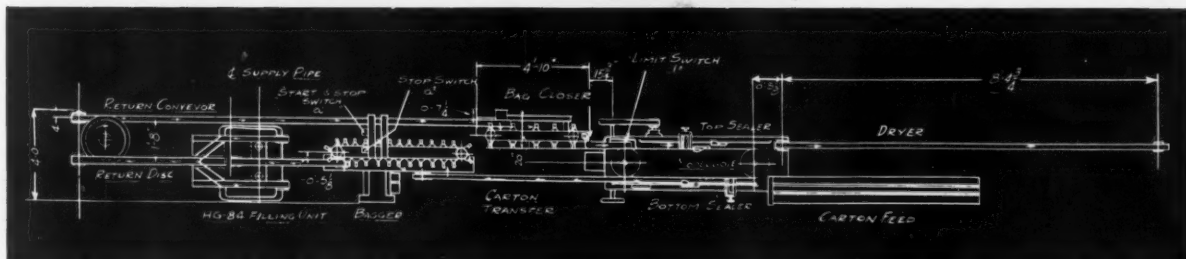
Makers of quality powdered dessert preparations, GOOD LUCK has one of the most up-to-date plants in the country, with all modern equipment for swift, efficient handling of their products.

Their S & S Packaging Line, for example, is completely automatic and integrated. The line requires but two full time operators—with another whose time is partially needed.

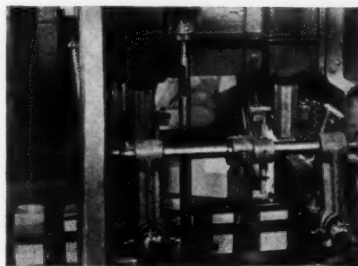
Net result is a minimum unit cost . . . and, the savings count for extra profit on each unit produced!

● If you're bothered by the rising costs of materials—S & S automatic packaging is one way to help bridge it; let the savings maintain your present profit margin. Details on request; write—

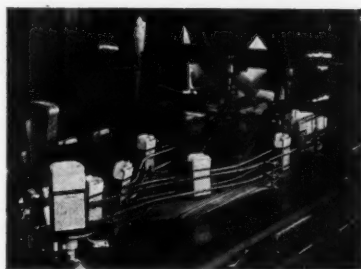
**STOKES & SMITH CO.**  
PACKAGING MACHINERY PAPER BOX MACHINERY  
FRANKFORD, PHILADELPHIA, U.S.A.



You're looking along the S & S automatic packaging line used by the GOOD LUCK FOOD CO.



This is the tandem S & S bag inserting machine that opens, shapes and places two bags at a time into the automatically erected and bottom-sealed cartons.



Here, the S & S duplex filling machine removes one carton, replaces it with another, while still a third is being filled.



## Packaging Line

for Good Luck Food Co.:

CARTON SEALER • BAG INSERTER  
4-STATION FILLER • BAG CLOSER

**FULLY AUTOMATIC**





Top. Ingram's Cream goes from a glass jar with label and tuck carton to a glass jar with brand and product name anigraphed directly on the glass. A sleeve of plain board protects the jar in shipment. Bottom. Minit-Rub changed over from collapsible tube to glass jar. Design on carton and jar label affords continuity for brand identity.

## Lines shift for the duration

Two or three years before shortages in various packaging materials made it necessary for many companies to seek substitutes, the Bristol-Myers Co. was developing in its laboratories substitutes and replacements for some of the materials used in the packaging of its products. When the government began the curtailment of certain vital materials, the Bristol-Myers Co. was ready with a number of successful substitutes for the packaging materials themselves and had plans for handling the problem of changing over and adapting its machine lines to take care of these wartime packages. These changes in production lines were many and meant, of course, much readjustment and adaptation of machinery and equipment.

The necessary changes in the production line for Mum, the popular deodorant made by Bristol-Myers, were six—in that

one line alone. Changes also had to be made in the Sal Hepatica, Ingram's Improved Cream and Minit-Rub lines as well as the establishment of a production line for Touthay, a hand lotion, which had had a new bottle designed for it. Although the adjustment demanded to streamline its plant for wartime production and keep its products on the market in attractive, efficiently produced consumer packages was great, the Bristol-Myers Co. made all the necessary changeovers and made them in a reasonably short time right in their own plant with their own technicians in Hillside, New Jersey.

The 10-cent size of Mum deodorant used to come in a plastic container with a light metal cap. Plastics, so vital in the creation of armaments, were ruled out for items like Mum and Bristol-Myers changed from a plastic container to a small glass jar. Although the jar was gaged to hold exactly the same amount of deodorant cream as the former plastic one, it was necessary for the walls of the glass to be thicker than the plastic. Because of this, the cap and the parchment disc, covering the cream, had to be larger. This meant, first of all, that it was no longer possible to feed the containers automatically by means of a sorting wheel. Formerly, the containers had been placed in the hopper of this wheel and they were fed out, right side up, ready to go to the filling machine. With the glass jar, the sorting wheel had to be eliminated and this part of the production line made into a manual line. A table was constructed together with a conveyor and the filling machine was fed by hand.

Since the filling machine had been constructed to take care of the plastic container with its smaller diameter, the machine had to be rebuilt to fill the larger glass jar with the required amount of cream. Engineers at the Hillside plant took the machine parts and readjusted them and rebuilt the machine itself so that it would function just as accurately and rapidly with the glass as it had with the plastic containers.

A waxed paper wrap is no longer used on the Sal Hepatica carton. The printing is done directly on the carton itself. There is practically no difference in package appearance. The Mum packages on the left are the new ones. Note slightly larger jar and carton. Both present glass jar and former plastic one hold the same amount of Mum.





From the filling machine, the jars of Mum go to what is known as a disc machine. Here the small discs of parchment, printed with instructions on the use of the product, are applied to the top of the cream. These pieces of parchment take the place of closure liners. The parchment is applied automatically and must fit in the center of the surface of the cream. For the new containers the disc had to be larger and the disc applying machine had to be adjusted to apply the pieces of parchment properly.

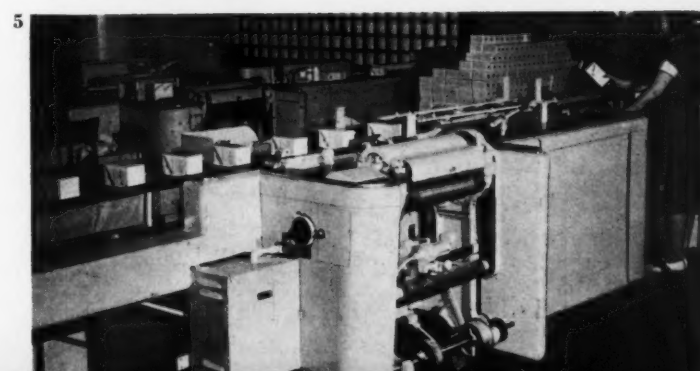
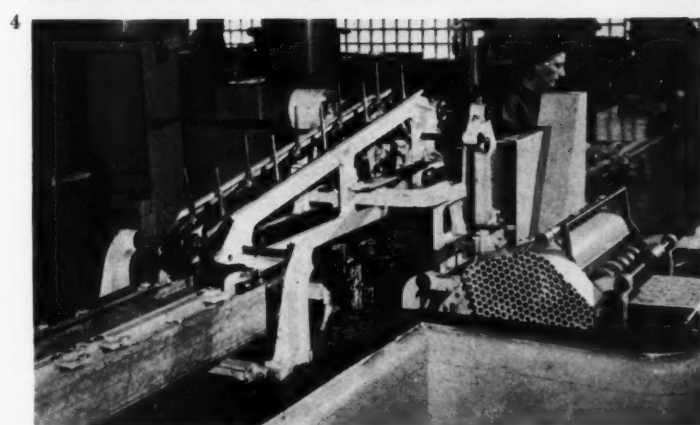
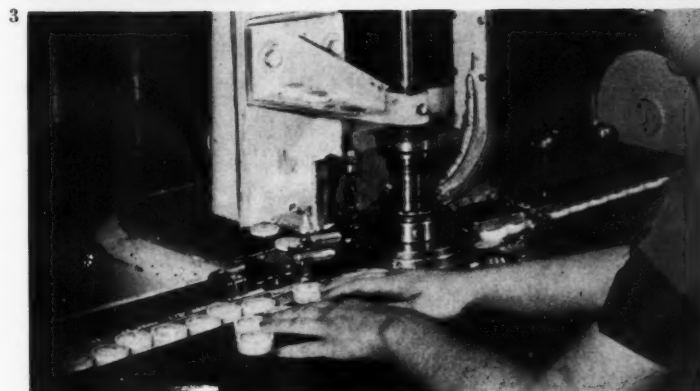
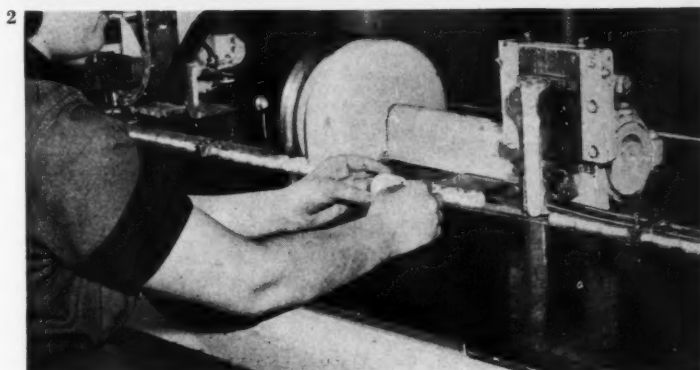
Although, fortunately, the company was able to retain approximately the same size closure for the Mum glass jar as that used on the plastic one, thus involving very little additional material for the manufacturing of the metal cap, there was just enough difference in size to call for a change in the capping machine. This was accomplished so that the line from the filling machine to the disc and on through the capping machines remains automatic.

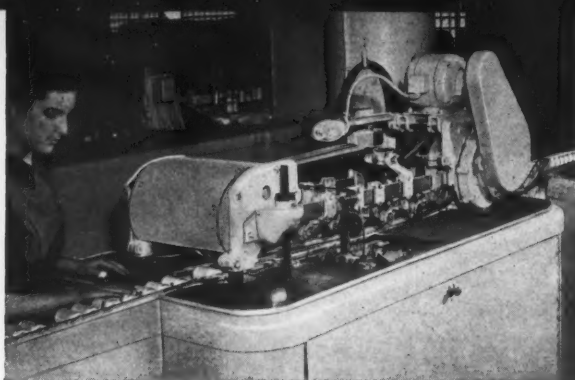
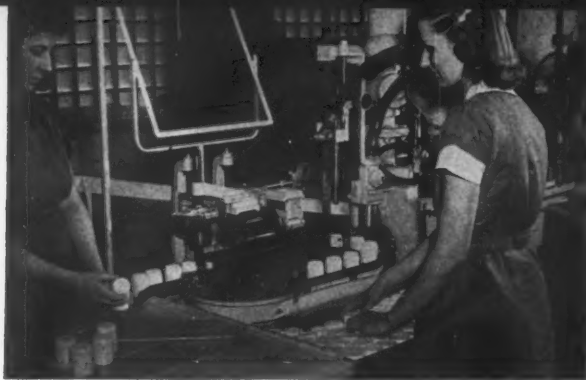
After the cap has been fitted on the jar, the product is ready for the small consumer carton. The jars of cream are placed in the folding boxes automatically by a cartoning machine. A slightly larger carton, of course, had to be used for the glass jars. The design on the carton was retained, but the color was used in a somewhat different manner on the new folding boxes. Changes were made on the cartoning machine to enable the new size cartons to be used in the old machine. After the jars of cream are cartoned, they go to the bundling machine, which assembles 12 cartons and wraps them in kraft paper, ready to be shipped to customers. The bundling machine is adjustable to various sizes, so that no radical change had to be made in the equipment to wrap 12 of the new packages.

The next line in which a number of shifts had to be made is that for Ingram's Improved Cream. Certain savings for the company from the production standpoint were involved in changeovers here. The cream jar had had a paper label and Bristol-Myers decided that instead of using this method of brand and product identification, the company would have the milky glass jars printed by the anigraphic process. This eliminated one step in the production line since the labeling machine was no longer needed for these jars. Another saving was effected when the printed tuck carton was set aside in favor of a plain board sleeve which fits tightly over the jars of Ingram's cream. The discarding of the carton, however, and the use of the sleeve involved a number of changes in the bundling machine in order to control properly the packages at the intake and through the magazine.

Changes in the Sal Hepatica line were rather slight since they meant only the elimination of the printed waxed paper overwrap and the use of a printed carton with a varnished finish. The machine which applied the former waxed paper wrap is no longer used and it will be moved out of the production line. At present, some of the working parts have simply been disconnected and the machine is used to move the packages of Sal Hepatica along from the cartoning machine to the bundling equipment.

1. Hand feeding to filling machine is now necessary in the Mum line. This work was formerly done by a sorting wheel. 2. Disc machine which applies a printed parchment disc to the surface of the Mum. 3. Closures are applied to the Mum jars by this capping machine. 4. Bundling machine wraps 12 Mum cartons together in kraft paper. This machine is adjustable and is used to wrap various packaged products. 5. Machine which applies waxed paper wraps to cartons. Formerly used on Sal Hepatica line for wrapping, but when the waxed paper wrap was eliminated, it was used to move packages from cartoning machine to bundling machine.





6. Former tube filling equipment which Bristol-Myers' engineers adapted to filling jars with Minit-Rub when collapsible tubes were no longer available for the product. 7. Labeler which applies labels to round jars. Although purchased for the new Minit-Rub jars, it is also used for other products packed in similar sized jars.

The Sal Hepatica and the Ingram's cream lines proved relatively simple to adjust, but another item demanded an almost complete changeover—the Minit-Rub line. The discontinuance of metal tubes for Minit-Rub and the substitution of glass jars created the need for an entirely different kind of package production. The first piece of equipment to be transformed was the tube filling machine. The old one was adapted and made into a jar filling machine. It was decided to use labels on the jars, so a new machine was purchased for this purpose. However, from a production standpoint this was an investment which does double duty in that the machine can be used for other Bristol-Myers' products which are packed in jars similar in size to those for the new Minit-Rub and the production line for the latter was made a part of other lines already functioning. The product storage and filling hopper is being moved so that the Minit-Rub will be utilizing to the fullest these other already operating lines.

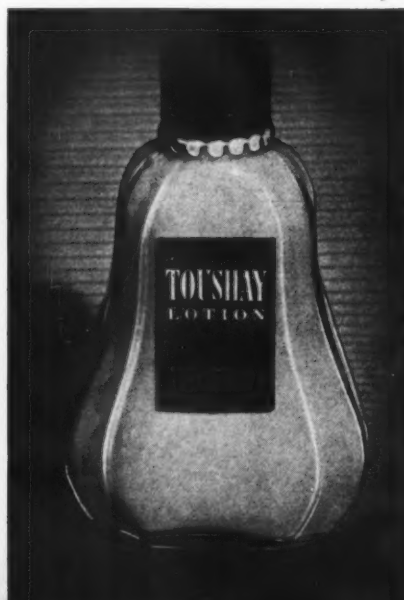
When Bristol-Myers recently developed a new hand lotion—Toushay—they found that the production line for the product would have to be almost entirely new. In order to introduce this new product on a highly competitive market, a new and distinctive container was needed to arouse public interest in the lotion. The package had to have an outstanding silhouette and to suggest quality at a quantity price. In addition, the package had to be soundly designed so that it could be ultimately produced at the rate of 120 a minute, would handle steadily on conveyors and label easily. The flat-sided bottle with plastic closure finally arrived at, proved eminently satisfactory from both a sales appeal point of view and that of production. Since the lotion was to be geared to mass production, manual labeling was ruled out in-

asmuch as only about 15 bottles a minute can be labeled by hand, applying both front and back labels. The company installed a labeling machine which is hand fed, but is equipped with a front and back, "2-at-a-time" feature, adapted for affixing one front and one back label. The operation is done at the speed of 80 labels per minute. Toushay bottles are filled by a six-head filler and then capped by machine before they are labeled.

The line of production which was worked out is notable for space as well as cost saving. A straight-line conveyor system takes the bottles from the unpacking table to the table where the filled and capped bottles are ready for shipment. From unpacking table, the bottles go to the blower which prepares them for filling. Emerging on the same conveyor from the blower, they go to filler, capper, labeler, then out directly on the table where they are assembled for packing. All these operations are planned to take a minimum of time and labor in a line geared to mass production.

*Credit: Filling machines by Pneumatic Scale Corp., Ltd., Arthur Colton Co. and Filler Machine Co. Capping machines by Consolidated Packaging Machinery Corp. and Lawson Machine & Tool Co. Cartoning machines by F. B. Redington Co. and R. A. Jones Co. Labelers by Standard-Knapp Corp. and New Jersey Machine Corp. Bundlers by Package Machinery Co. Glass containers by Hazel-Atlas Glass Co. and Anchor Hocking Glass Corp. Closures by Continental Can Co., Owens-Illinois Glass Co., Anchor Hocking Glass Corp. and Crown Cork & Seal Co. Cartons by National Folding Box Co. Anigraphing by Anigraphic Process, Inc. Labels and inserts by Lord Baltimore Press. Toushay bottle designed by Georges Wilmet.*

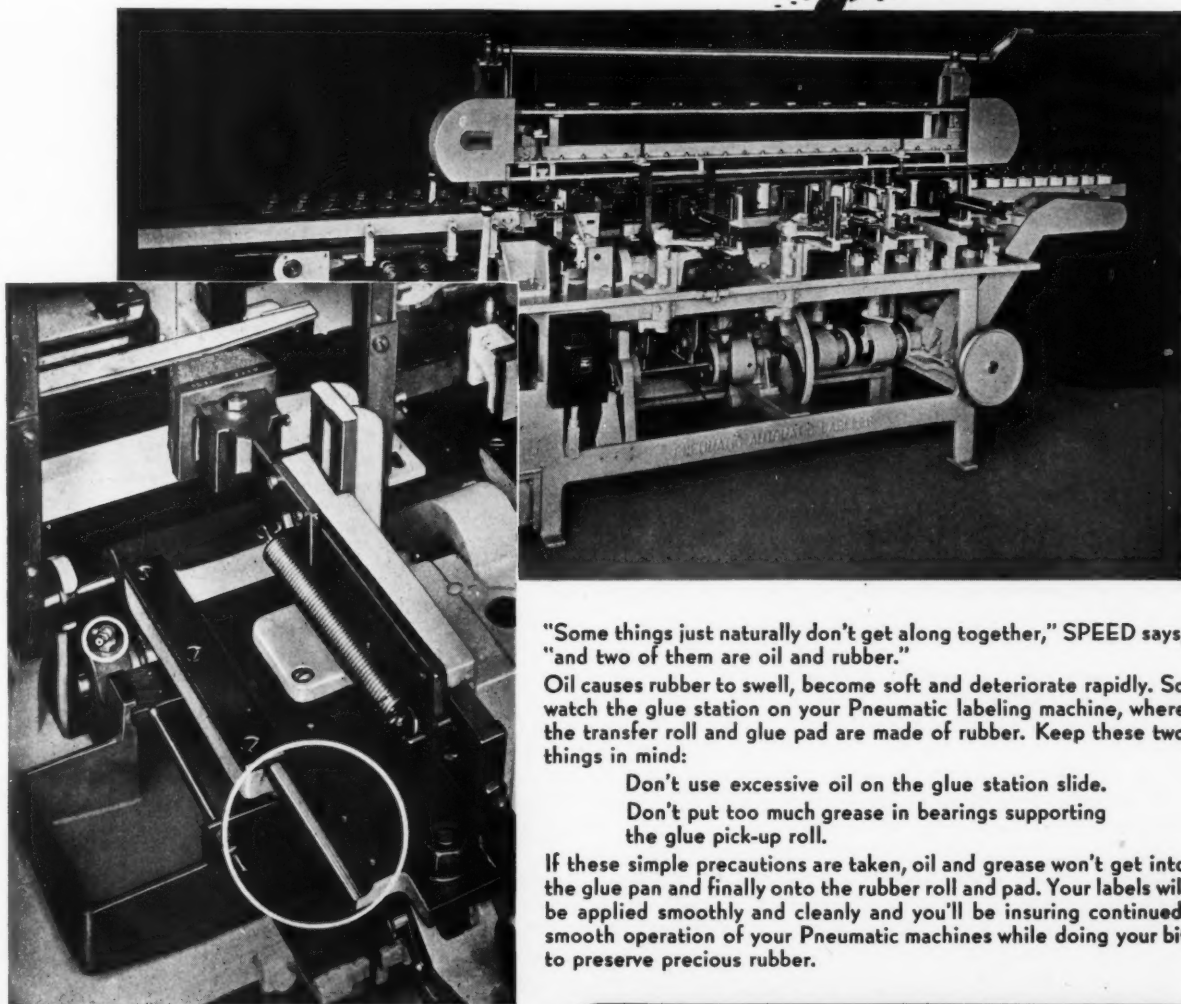
8. New production line for Toushay, showing at left the six-head bottle filler, the capping machine (center), and the labeler with automatic ejection (right). 9. New Toushay bottle has clean-cut silhouette, handles steadily on conveyors and has flat sides for easy labeling.



It's a case where

# "OIL & RUBBER DON'T MIX"

says: "SPEED" PRODUCTION  
"KEEP THEM APART"



"Some things just naturally don't get along together," SPEED says, "and two of them are oil and rubber."

Oil causes rubber to swell, become soft and deteriorate rapidly. So watch the glue station on your Pneumatic labeling machine, where the transfer roll and glue pad are made of rubber. Keep these two things in mind:

Don't use excessive oil on the glue station slide.

Don't put too much grease in bearings supporting the glue pick-up roll.

If these simple precautions are taken, oil and grease won't get into the glue pan and finally onto the rubber roll and pad. Your labels will be applied smoothly and cleanly and you'll be insuring continued, smooth operation of your Pneumatic machines while doing your bit to preserve precious rubber.

**PNEUMATIC SCALE CORPORATION, LTD.**

71 Newport Avenue, North Quincy, Mass.

Branch Offices:

New York • Chicago • San Francisco • Los Angeles



## PNEUMATIC

SCALE CORPORATION, LTD.

PACKAGING & BOTTLING EQUIPMENT

JULY • 1942

77





1. Ella Taracka, supervisor in the war-production division of the Northam Warren Co., is buffing small metal parts that will go into the control system of a plane. She was one of the first girls at the plant to switch from nail polish packaging line to war work.

## Girls in war work

Girls whose sole effort a month or two ago was to make women's hands look lovelier, are being taught how to put fighting weapons into the hands of our armed forces. Formerly they worked on filling, capping and labeling lines at Northam Warren nail polish plant. Now they are operating precision machines and assembling intricate parts used in airplane communications systems.

This manufacturer was among the first in the cosmetic industry to devote a part of his production facilities to war work, although production in the nail polish division is continuing and will continue as long as ingredients are available, the company stated.

From an efficiency standpoint, these young women are developing greater skill than men in the operation of certain precision machines and they have proved unusually successful in operating bench tools and drill presses as well as developing a high degree of deftness in the intricate work of assembling small parts.

Competition among the young women for transfer to the war-works division has been keen, because most of them have husbands and brothers in service and are eager to be doing their part in winning the war.

The women are aided in making the transition from packaging lines to war work at a trade school opened in the plant. Here, those who wish to be transferred, devote 30 minutes of

their own time after every working day over a period of two to three weeks before they are put on the war-production lines. Those who have been changed over are now earning more money, but they did not know this when they volunteered for the war-work division. Their chief desire was to be doing something on the home front.

During the training period, the women workers are taught how to use gauges, micrometers and other precision instruments. The school is under the supervision of the plant engineer, also until recent months a nail polish employee.

Classes are supplemented by personal instruction on special operations. Some of the simpler types of work can be learned in a few hours, but as stated above, the more intricate jobs require several weeks' training. After completing the training course, each girl is put to work as an apprentice under close supervision for as long as 30 days before she is on her own. This applies especially to the machining of materials to accuracies as fine as a thousandth of an inch. On such hair-line precision, many a pilot's life may conceivably depend.

Most of the girls are in their early twenties, many with members of their families in the armed forces. One, for example, has a brother at the front who wrote recently, "Hurry up! All we need are supplies. We've got the men who know how to fight." Another girl said, "I'd be on the firing line if they'd take me. Here I'm doing the next best thing."



# NEWS... *but not New*

— Fortunately for U. S. war economy,  
the trend to *Glassed Products*  
started years ago . . .

War has made glass and other packaging materials *news*. But most glassed products *are not new* . . . to you or to retailers.

Fortunately for America, the trend to glass started years ago. *Fortunately*, because today many manufacturers already have the experience and equipment necessary for packing foods, pharmaceuticals, vitamin products and other necessities in glass containers.

**BEFORE DECEMBER 7, 1941**, you may not have noticed how many products were packed in glass . . . a large number in our Duraglas\* containers. Eight years ago, coffee vacuum-packed in resealable glass jars came on the market. Vegetables, fruits and baby foods have been increasingly packed in glass for many years. Syrups, juices and numerous other products have been glassed for years.



**TODAY**, you are more conscious of glass packages because you see so many of them. Glass *is* doing an all-out job of packaging countless necessities for the armed forces and civilians.

**AFTER VICTORY** . . . the trend to glass will continue. Our Duraglas technique has made glass containers practical for many new uses. Glass, together with plastics and metal containers (which we also make), will give post-war America even better packages . . . more useful, convenient, economical.

*\*Duraglas, the improved technique  
in glassmaking*

## OWENS-ILLINOIS

*Packaging Service*

Owens-Illinois Glass Company, Toledo • Owens-Illinois Can Company, Toledo  
Libbey Glass Company, Toledo • Owens-Illinois Pacific Coast Company, San Francisco



# *Why advertise* **MORRISON WIRE STITCHERS** *at a time like this?*

★ An almost complete blackout exists on the manufacture of wire stitching machines. Critical metals used in their manufacture are vitally needed for the machines and munitions of war.

*Why advertise MORRISON STITCHERS at a time like this?*

Because we have faith in the future! Because we have confidence in the ability of MORRISON STITCHERS to develop greater uses in the post-war future than in the pre-war past.

To those of you who now need, but will have to wait for new MORRISON STITCHERS, we pledge our word that you will obtain the finest machines

ever produced in the history of machines of this type.

In the meantime, we urge all present operators of MORRISON STITCHERS to keep them properly lubricated. It requires so little time and effort to do that simple job that it should be made a regular routine. Costly repairs and more costly delays can be avoided by the regular lubrication of working parts.

When conditions call for the personal cooperation of Seybold representatives, everything possible will be done to assist.

In telling you these facts, we believe we have answered the question—"Why advertise MORRISON STITCHERS at a time like this?"

★ ★ ★ **SEYBOLD DIVISION • Harris • Seybold • Potter Co.**  
843 WASHINGTON STREET • • • DAYTON, OHIO ★ ★

**SEYBOLD SALES AND SERVICE**

New York:  
**E. P. LAWSON COMPANY, INC.**  
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Detroit, Michigan:  
**CHAS. A. STRELINGER COMPANY**  
149 East Larned Street

Southern Sales District:  
**HARRIS-SEYBOLD-POTTER COMPANY**  
220 Luckie Street, N. W., Atlanta, Georgia

West Coast Distributor:  
**HARRY W. BRINTNALL COMPANY**  
San Francisco • Los Angeles • Seattle

Canadian Distributor:  
**HARRIS-SEYBOLD-POTTER (CANADA) LTD.**  
Toronto and Montreal







2

2. Careful inspection is made as the girls check in for work on three shifts a day. 3. Girls work in two's and three's in the assembling of vital parts for airplanes. Fluorescent lights guide this exacting work. 4. Jean Fifield operates electric testing panel. Assembled parts, passing on a moving belt, are tested on a 3,500-volt current. Neon light flashes instantly if there is a fault anywhere in the part. 5. Girls operate machines which stamp identification numbers on vital parts. Girls in row to left are operating drill presses, which make and thread holes in same small parts.



4



5



Still another is a veteran of the last war. She worked on a lathe in Scotland, turning out war goods. Today she has a son at the front and has lost no time in doing her bit to see that he is supplied with equipment. Because these women have good jobs, their husbands and sons and brothers are able to give up theirs to serve their country.

When on duty the girls wear white smocks, starched caps, socks and saddle shoes for the most part. They keep their nails clipped at new efficiency lengths and have comb, lipstick, handkerchief and pencil handy in their pockets, because good grooming is important in this plant which makes products for that sole purpose. The plant works on three shifts a day, eight hours at a stretch, with half an hour out for lunch served in the plant cafeteria at low cost. Some of the girls are now walking long distances to their work, due to the gasoline rationing which makes it impossible to go by automobile.

Northam Warren began conversion plans early last fall, sometime before Pearl Harbor. The company found it would be possible to utilize its plastic molding equipment, used in the making of closures, because for precision and speed it represented some of the latest types. The lathes and tool-making equipment formerly devoted to cosmetic production equipment, engineers, tool-making and drafting talent also offered good facilities for war production.

Before priorities were imposed, the company obtained a number of intricate precision machines. Tooling up required the plant's own facilities, plus dozens of outside tool makers. First government contract was for intricate parts used in communications systems of planes. Today they are being turned out on a scale undreamed of four or five months ago, the company said.

## U. S. patent digest

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 10 cents each.

**BAG AND METHOD OF MAKING SAME.** P. Knuetter (to Thomas M. Royal & Co., Philadelphia, Pa.). U. S. 2,283,069, May 12. A flat bag comprising a single piece of heat-fusible sheet material folded double upon itself in a lapping relation with the lapped portions of the sheet. The folded edge portion is tucked inward toward the lapped wall from side to side thereof.

**SALT DISPENSER.** D. O. Ford, Petersburg, Va. U. S. 2,283,547, May 19. A packaged article forming an individual condiment container and shaker of cylindrical cigarette-like form provided at one end with a flat bottom closure forming a base for supporting the article in an up-standing position.

**CAP RETAINER FOR DISPENSING TUBES.** L. M. Rausch, Neenah, Wis. U. S. 2,284,020, May 26. The combination of a dispensing tube having a discharge nipple and a closure cap with a cap retainer. The upper member has a socket adapted to rotatably receive the cap with portions intersecting and extending in opposite directions to form pins terminating in fingers which engage the buttons.

**METHOD AND APPARATUS FOR PACKAGING ASPHALT AND CONTAINER THEREFORE.** J. Miller, Jr. (to Trumbell Asphalt Co., Chicago, Ill.). U. S. 2,281,854, May 5. An apparatus for manufacturing cylindrical containers of paper stock consisting of a stitching machine with a stitcher head and an anvil below.

**MAKING PAPER BOXES.** R. A. Himes, Piedmont, Calif. U. S. 2,284,283, May 26. A box blank cut and creased to form a pair of side walls and a pair of end walls. The side and end walls are alternately folded and connected in an end to end series. A side bottom section is connected foldably to each side wall.

**SHEET SEPARATOR.** S. K. Sayles, Meriden, Kans. U. S. 2,284,071, May 26. A cigarette paper book with a pack of separable cigarette papers and a cover for the pack of papers, which is hinged to cover panels one of which has an opening adjacent to one corner. The suction element which is of a cup formation is placed in the opening with the mouth of the cup in contact with the pack of papers.

**CARTON PACKER.** C. P. Swan and F. W. Dickson (to The Coca-Cola Co., Atlanta, Ga.). U. S. 2,282,619, May 12. A device consisting of a holding member having a flat bottom portion and sloping sides adjacent to the bottom portion and extending inward to the roof segments connected with these sides and a guide notch formed adjacent to the inner ends of the roof member.

**WRAPPING MACHINE.** O. Sandberg (to Modern Equipment Corp., Defiance, Ohio). U. S. 2,283,097, May 12. A wrapping machine for articles consisting of a mechanism for folding a wrapper about the top and sides of an article and across the edges of a card associated therewith and comprising a vertical folding way with side and end folding plates. A reciprocating elevator is adapted to engage and elevate the article and card through the said way.

**PACKAGED CAKE.** J. McManus (to Cushman's Sons, Inc., New York, N. Y.). U. S. 2,283,380, May 19. A packaged multi-layer cake comprising superimposed layers of ready-baked cake free from foreign edible material on their marginal edges and separated by edible confection which is normally plastic and flowable, with all layers co-extensive in area.

**MECHANISM FOR APPLYING LABELS TO ARTICLES.** G. W. von Hofe (to New Jersey Machine Corp., Hoboken, N. J.). U. S. 2,284,311, May 26. A labeling machine with means for conveying a label over a predetermined path for application to an article and means for providing the label with spaced folding lines during the conveyance thereof by said conveying means.

**ART OF PACKING.** W. H. Brooks (to Milprint, Inc., Milwaukee, Wis.). U. S. 2,284,604, May 26. The method of packing which comprises permanently attaching a relatively impervious flexible flat sheet to the inside of a flat folding cardboard blank along longitudinal and transverse areas.

**MANUFACTURE OF VINYL RESIN SHEETING.** R. H. Talbot (to Eastman Kodak Co., Rochester, N. Y.). U. S. 2,282,009, May 5. The method of facilitating the removal of a vinyl resin film from a surface upon which it has been cast from solution into which it normally ad-

heres tenaciously. This comprises removing the major portion of the solvent by means of dry air and then subjecting the free surface of the film while the film is in close contact with the film-forming surface to the action of an atmosphere having an absolute humidity ranging from 100 grains of moisture per pound of dry air to an amount of moisture corresponding to a value just below the saturation point of the air.

**ENVELOPE.** H. G. Frick, Palermo, Italy. U. S. 2,284,386, May 26. An envelope having an integrally formed main portion with side and end flap and a thread extending along an edge of said envelope, said thread being woven through a line of perforations provided in said edge in a manner to form opposed semi-circular shaped loop portions above said edge in a side flap and below said edge in the main portion and substantially centrally thereof. The pulling of the thread along the edge forms a central cut-out portion on both sides of the edge to open the envelope and to facilitate withdrawing the contents.

**PAPER WAXING MACHINE.** J. Bennett, Passaic, N. J. U. S. 2,284,553, May 26. A machine for waxing paper with the receptacle for the heated wax with means for guiding the paper through a receptacle and a tank for cooling liquid, with an inclined essentially elongated chilled flat top surface over which the bottom side of the waxed paper is drawn. A chilled roller is disposed between the wax receptacle and the cooling unit, which has a periphery thereof in intimate contact with the upper surface of the paper for hardening the wax.

**EXHIBITION PACKAGE.** N. H. Lonz (to Hinde & Dauch Paper Co., Sandusky, Ohio). U. S. 2,284,527, May 26. A combined packing and display container comprising in combination a container body, a side thereof hinged thereto and having a side formed upon that face which is inward when the container is closed. There is formed a shelf parallel to the bottom and spaced one-third upward from same when in the display position. A display flap is hinged to the top of the back and adapted to stand above the top of the container when in the display position.

**BOTTLING MACHINE.** F. C. Hamilton and E. C. Landholt (to L. Ray Schuessler, St. Louis, Mo.). U. S. 2,282,576, May 12. A bottling machine with means for moving through the machine bottles in which the fluid is to be bottled and means for automatically introducing a sipper into each bottle, moving through the bottling machine as said bottle passes a given point. The sipper introduces means whereby a rotary structure is adapted to conduct the sipper from horizontal to vertical positions for introducing this sipper into the bottles as they pass.

# CASE HISTORY No. 1136

ANOTHER PROBLEM SOLVED BY EQUITABLE'S "PROTECTION-PLUS" BAGS



## MORE "ESSENTIAL MATERIALS" FREED FOR WAR INDUSTRIES

From almost every field of packaging, — foods, chemicals, processing materials, — have come urgent calls for efficient, economical, practical packaging substitutes.

EQUITABLE'S famous Research Division has achieved amazing success in each of these fields... using combinations of special paper stocks to fulfill the exacting demands of these industries. Why not let us tackle your problem... no obligation, of course.

EQUITABLE PAPER BAG CO.  
Research... Case No. 1136

### PRODUCT:

Baking Powder

### FORMER CONTAINER:

Tin Can

### REASON FOR CHANGE:

Shortage of essential materials

### PACKAGE REQUISITES:

Sift proof  
Moisture Vapor Proof  
Eye appeal for counter selling  
Durability...for shipping in multi-wall shipping container bags

### SOLUTION:

"Protection Plus" Bags...Triple wall, of super Kraft with laminated inner liner.

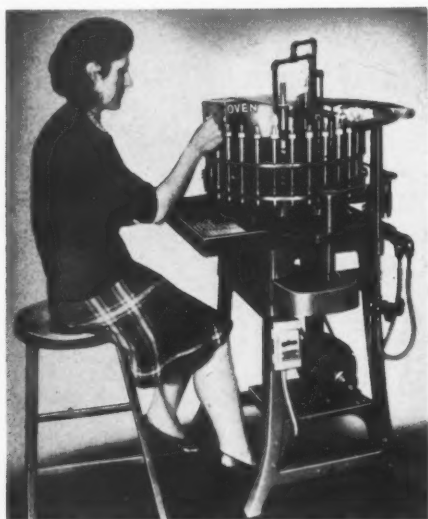


## EQUITABLE PAPER BAG COMPANY

EXECUTIVE OFFICES AND NORTHERN BAG FACTORY—47-00 31st PLACE, LONG ISLAND CITY, N. Y.  
PAPER MILL AND SOUTHERN BAG FACTORY—ORANGE, TEXAS



# Equipment and Materials



## AMPULE SEALING MACHINE

The Eisler Engineering Co. is marketing a 25-head sealing machine which is said to be adaptable for various sizes of ampules by placing larger or smaller bushings into the chucks. The chucks rotate continuously at approximately 100 r.p.m. The fires are adjusted vertically by means of a handwheel. This machine, the company reports, seals-in 5 ampules at one time and one operator can seal-in approximately 2,000 to 3,000 ampules per hour. The machine requires a  $\frac{1}{4}$  h.p. motor,  $\frac{1}{2}$  lb. gas pressure and  $2\frac{1}{2}$  lbs. of air pressure. The gas and air are regulated by the valves. The machine may also be utilized for sealing-in the ends of small diameter glass tubing, according to the manufacturer.

## NEW CARTON

A new seal-end style carton, featuring a pouring and a reclosing tab, has been perfected by the Reynolds Metals Co. The pouring spout opening eliminates the use of metal or plastic closures and the reclosing tab prevents spilling, excludes shelf dust and offers substantial protection to the balance of the contents, according to F. A. Sunderhauf of the company. The carton is designed for the packaging of dehydrated foods as well as cereals, specialty and prepared flours, salt, tea, coffee, sugar, cocoa, baking powder, soda, soap powders, cleansers and many other products. The "Pour-it" cartons can be filled and sealed on most standard automatic filling and sealing equipment.

## PROTECTIVE PAPERS

Newark Paraffine & Parchment Paper Co. announce a standard stock line of protective papers particularly adapted to the packaging of quick frozen foods. The waxed papers come in both the transparent and opaque types, are moisture-proof and thermoplastic. Some of them have grease-proof qualities. A number afford good printing surfaces and are smudge-proof.

## HIGH LUSTER PAPER

Bulkley, Dunton & Co. are the makers of a high luster, mirror-like finish paper called Plasti-Glo which the company states fills a much-needed gap in the packaging, labeling and promotional fields caused by priorities. The new finish, the firm reports, is not affected by priorities and combines eye appeal together with the advantage of a water repellent surface, protective qualities

of vapor permeability and tensile strength to meet requirements of most packaging needs. The paper is in a wide color range.

## NON-RUBBER GASKET

In announcing their new Darex Cap Compound for dry unprocessed packs, the Dewey and Almy Chemical Co. state that it contains no rubber, no synthetic rubber, no reclaimed rubber and is made from materials not critical today. The compound is nozzle applied on existing lining machines without mechanical changes and is then dried in place to become an integral part of the cap. This new compound is not yet acceptable for processed foods, but for a dry vacuum-packed product such as coffee it possesses the plastic deformability that gives a tight, positive seal. Production facilities of the new base material has limited its supply to date although already 4,000,000 to 5,000,000 screw caps have been lined with the compound at commercial lining speeds. While pointing out that they cannot yet offer a suitable replacement for rubber for processed foodstuffs, officials of the company expect that modified forms of their new material will enable them to solve this problem for the 1943 pack. Such a compound would be used for glass-packed processed foods in both commercial and home canning caps.

## NEW CELLULOSE PRODUCT

Onco "V" is the name of a new cellulose product developed by Brown Co. It was originally discovered during research experiments on filter materials for gas masks. First commercial use of the product was as an insole fabric to replace latex-impregnated materials commonly used before the rubber restrictions. However, the company finds that Onco "V" may prove a logical substitute for leather and cork as well as other materials.

## BOOK BUNDLING MACHINE

Package Machinery Co. announces the development of a book bundling machine, designed to wrap groups of books of varying size and quantities. Quickly adjustable, both as to speed and package size, the machine will wrap 30 book bundles per minute in heavy kraft paper, the company states.



## PACKING MATERIAL

A new type of shipping packing material, known as Research Shipping Pack, is announced by Research Products Corp., Madison, Wis. The resilient material is made of kraft stock, expanded into a honeycomb pattern. This expansion process creates a third dimension having a cushioning property. The pack will conform to double curvature surfaces and because of its lacy openness, it partially reveals the article packed, the company declares. It comes in rolls and pads.

# WHEN YOU CHANGE FROM **TIN TO PAPER**



*This year, Sutherland celebrates its 25th anniversary. Started in 1917 (the year America entered World War I) with 10 workers, the company now gives employment to 2,180.*

With tin, steel, and other strategic packaging materials busy battling Schicklgruber and his partners, hundreds of manufacturers are making successful changes to paper packages.

Fortunately, there is an abundance of paperboard to replace packaging materials on the critical list.

If your product is one that will soon be packaged in paperboard, naturally you will want to make the shift with a minimum of friction. You will want to retain as much of the identification value of your old package as possible, and you will want to do these things QUICKLY.

Sutherland is already producing many cartons and paper cans conceived as alternate packages in this period of transition . . . packages that will be in use long after the emergency has passed.

Paperboard can serve a multitude of packaging needs . . . and do it economically. At Sutherland it can be paraffined, laminated, or combined with other materials for adequate product protection, and it can be printed for eye appeal and quick identification. Moreover, it can be fabricated into many sizes and shapes . . . rectangular, conical, cylindrical, and pail-shaped. Sutherland has the equipment for performing all these operations plus the know-how to choose the right ones for your particular job.

Whether your problem is new packaging for foodstuffs, tobacco, small metal parts, clothing, or other products . . . let expert counsel and experienced hands introduce you to the possibilities of paperboard.

Sutherland's complete developmental, design and manufacturing facilities are at your service. Wire or call! America is in a hurry!

## SUTHERLAND PAPER CO.

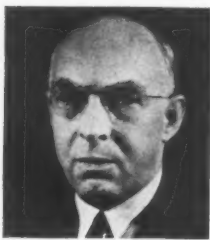
KALAMAZOO, MICHIGAN

JULY • 1942 85

# Plants and People

**John L. Collyer**, president of The B. F. Goodrich Co., announces the resignation, because of ill health, of V. I. Montenyohl, vice president and member of the organization for the past 35 years.

**Roe S. Clark**, vice president and treasurer of Package Machinery Co., has been elected president of the National Metal Trades



**Roe S. Clark**

Assn. Mr. Clark's election to the presidency of N.M.T.A., composed of more than 1,000 manufacturers engaged almost entirely in war work, marks the completion of 8 years' service as an active member of the organization's executive committee.

The election of **Alfred A. Halden** as vice president in charge of manufacturing and of **Peter G. Evans** as assistant secretary, has been announced by National Starch Products, Inc. Mr. Halden has been connected

with the company since 1919 in its manufacturing and production division over which he is now director in full charge.

**Francis D. Gonda** has resigned as vice president of the Einson-Freeman Co. in order to volunteer his full time as Director of Advertising in the Greater New York War Bond Pledge Campaign. **Sam Gold** of Chicago has become a vice president of the company and been placed in charge of its new premium department.

**Announcement is made** of the establishment of the Marty Paper Co., at 41 Park Row, New York City. The business is headed by **Frank A. Marty**, former sales manager of the Shapiro Paper Corp. **George R. Magee** will be sales director.

**Howard R. Stewart** has been appointed general manager of the Economic Machinery Co.



**Howard R. Stewart**

Mr. Stewart was formerly sales manager for the company and had been for many years an officer and director of the Stewart Boiler Works of Worcester, Mass. In his new position he will continue to devote a large share of his attention to those desiring assistance on current and future labeling problems.

The Old Dominion Box Co. of Charlotte, N. C., has added **Erv Presser** to its staff. Mr. Presser will be in charge of advertising and publicity, which he managed formerly, and in

addition will also handle the set-up box business out of Charlotte.

**Ernest A. Messenger**, in charge of packaging and container purchasing for Peter Cailler Kohler Swiss Chocolates Co., Inc., subsidiary of Lamont, Corliss & Co., has been released by the company to the United States Navy to serve as head of its newly formed Container Division. Working in the Office of Procurement and Material of the Navy Dept., Mr. Messenger will coordinate the packing and packaging problems of the Naval Bureaus, Marine Corps and Coast Guard. Particular emphasis will be given to conservation of materials and simplification of specifications. The division will work in close cooperation with the United States Army, the War Production Board and the container industry at large.

**Frank Griswold Hall**, president of Stein, Hall & Co., Inc., New York, and Stein Hall Mfg. Co., Chicago, announces the retirement of **Louis E. Leverone** as general manager of the Chicago company. **D. M. Hawley**, production director, succeeds Mr. Leverone as general manager of the company in Chicago.

The **Lithographers National Assn.** elected the following officers and directors for the year 1942-43: **Milton P. Thwaite**, president; **Louis Traung**, vice president; **George C. Kindred**, treasurer; **Maurice Saunders**, chairman of the board; **W. Floyd Maxwell**, secretary; and **Percival D. Oviatt**, general counsel.

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**F. C. Baselt** has been appointed manager of research, Atlantic Division, of the American Can Co. Mr. Baselt is one of the industry's leading authorities on heat penetration in the processing of canned foods. He was also largely responsible for the research development of the linings for beer cans. He has been with the company for the past 17 years.

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**Fred J. Huber**, a member of the sales department of The National Process Co. for 19 years, has left for Washington, D. C., where he will serve as Assistant to the Coordinator of the Lend-Lease Administration.

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**Thomas H. Page**, veteran salesman of the Mundet Cork Corp., died suddenly of a heart attack at his home in New Orleans, La. Mr. Page had been connected with the Mundet organization for 20 years, representing the closure products division and was in charge of the Houston and New Orleans district offices, covering the states of Texas, Louisiana and southern Mississippi, at the time of his death.





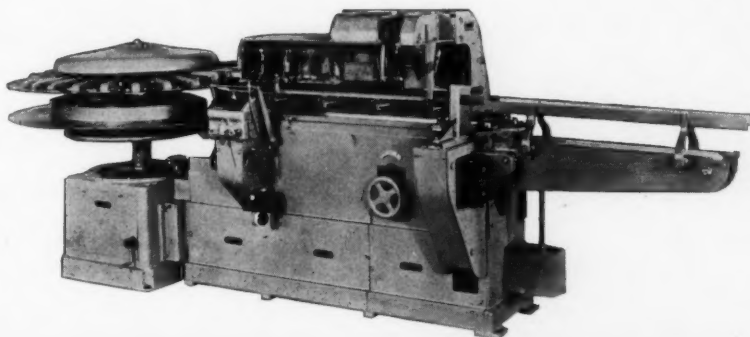
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SEALTITE is the ideal closure for sugar, salt, coffee, flour and similar food products, as well as for a wide variety of dry chemicals and drugs. The machine handles any standard intuck paper bag of from 2 to 10 lb. capacity.

We are still endeavoring to supply at least a part of the essential needs of our regular customers and are extending every effort toward maintaining service on Consolidated Equipment already in

operation. But in order not to divert any more material or labor than necessary from the war effort, we urge that you use extra care in maintaining your present equipment to make it last as long as possible.



**CONSOLIDATED PACKAGING MACHINERY CORP.**  
1400 WEST AVENUE      BUFFALO NEW YORK

## SENSATIONAL *New* CLOSURE

This new development is a triple-function secondary closure.

Hermetically seals every part and crevice of your closure.

1. Moisture-proof
2. Tamper-proof
3. Label-seal for wines, liquors, beer, drugs, pharmaceuticals, foods, etc.

It is easy to apply—self sealing.

Immediately available to all industries.



AMPLEY-AVAILABLE  
*EPPY Seals*

Can be imprinted in manufacture with any trademark, name slogan, or design in as many colors as you wish.

Replaces foil closures.

If you have a closure problem try Eppy Seals.

"EPPY SEALS" will do your job.  
Send for samples.

**SAMUEL EPPY, INC.**

333 HUDSON STREET

NEW YORK CITY

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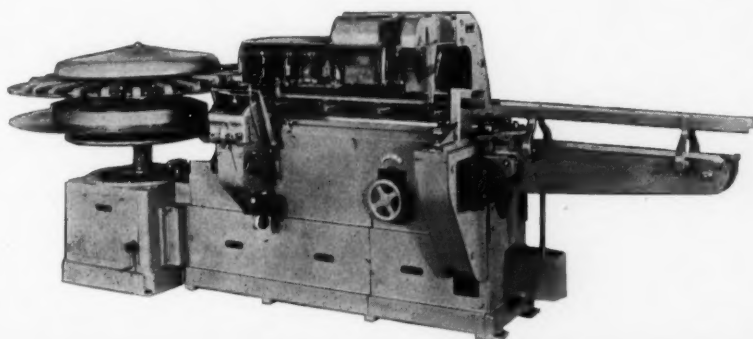
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**SAMUEL EPHY, INC.**

333 HUDSON STREET      -      -      -      NEW YORK CITY



## For Your Information

At the National Paper Box Manufacturers' Assn. 24th annual convention at the Drake Hotel, Chicago, representatives from the War Production Board, Office of Price Administration and the Canadian Wartime Price and Trade Board made it clear that packaging glamour must give precedence for the duration to the production of containers for munitions and essential civilian products and to the adaptation of the set-up box industry's capacity to production of all essential products within the industry's scope.

To define production for war, William W. Fitzhugh, chief of the WPB's Set-up and Folding Box Section, Containers Branch, listed three essential classes of packaging opportunities—munitions, supplies for the armed forces and supplies for essential civilian needs falling under the categories of food, clothing and shelter. "Your facilities must be curtailed," he said. "There is at present a reasonably ample supply of paperboard, compared with the host of stringent shortages the nation confronts. But this supply must be conserved."

John H. Paterson, vice president of the F. N. Burt Co., Inc., serving on Mr. Fitzhugh's staff, forecast a box production gap during the current changeover from packaging of a great variety of civilian merchandise to more and more equipment on the essential list. Government business was set forth by Mr. Paterson as the prime hope for closing up the gaps in the manufacturers' dwindling production for normal civilian needs.

Reporting on the experience of the industry in Canada, C. Victor Hodder, dollar-a-year man from the ranks of Dominion box manufacturers, listed current fears in Canada in the order of their importance as lack of raw materials, lack of orders and lack of ability to convert to wartime needs. He stated, however, that a new Canadian regulation was of help to the manufacturer—a regulation which compels box manufacturers' customers to accept prompt delivery, which thus alleviates the storage problems of Dominion box plants.

Wesley M. Dixon, vice president of the Container Corp. of America, pledged the manufacturers the aid of their suppliers generally in development of new coatings, adhesives and linings with which to meet the new kinds of packaging demands and he expressed serious doubt that the United States would ever see a return to the bulk merchandising methods of "cracker barrel" days despite the stress which has sometimes been placed on gloomy forecasts of this nature.

William B. Carr, president of the Chicago Federated Advertising Clubs, told how box manufacturers can contribute to the tremendous campaign now under way to stimulate war bond and stamp sales by disseminating bond and stamp advertising messages on every available package produced by the entire industry.

Last year's officials of the association were re-elected in a body: George J. Kroeck, Kroeck Paper Box Co., honorary president; C. W. Reiber, president; Walter P. Miller, Jr., vice president; Walter H. Deisroth, treasurer.

"The Law of Foods, Drugs and Cosmetics," by Col. H. A. Toulmin, Jr., (W. H. Anderson Co., Cincinnati. 1422 pp.) is the latest and one of the most comprehensive books to be published on the history, background, operation and results of the past and present laws governing our huge and ramified food, drug and cosmetic industries. A well-known and highly successful corporation lawyer himself, Col. Toulmin is of the opinion, frequently expressed in his book, that the present Federal food, drug and cosmetic laws are the greatest and most successful attempt yet made by any government to improve the health of its people and to raise the standards of an entire group of major industries.

Included in the book is the complete text of the Food, Drug and

Cosmetic Act of 1938, which covers the composition, quality, branding, labeling and handling of the products involved, the Wheeler-Lea Act and the Federal Trade Commission Act which deal with the advertising of drugs, foods, devices and cosmetics, and of all other related laws.

The Toilet Goods Assn., Inc., in a recent bulletin to its members urges all those in the industry to be as conservative as possible in the use of materials which are on the critical list or which may become critical in the near future. Eight definite ways of conservation are suggested and members are asked to adopt the methods suggested as a definite policy.

The Victory Bulletin of the Folding Paper Box Assn. of America contains a short summary by William Eadie, Acting Secretary of the British Carton Assn., of the folding box industry at the present time in Great Britain; a list of the various U. S. government markets and the various methods of purchase by Army, Navy, etc.; as well as a digest of priority regulations as they directly concern the folding box industry.

General Printing Ink Corp. has ready for distribution its American Halftone Black Demonstration—an array of 7 halftone black inks on 9 grades of commonly used stocks. It shows the printer and advertiser just what results may be expected, dependent on screen, ink and paper used. The entire demonstration is enclosed in a convenient slip-case, and die cuts indicate the classification of paper. The inks used in the demonstration, the company points out, all conform to the recent government regulations regarding toners in black inks.

Under a new plan to go into effect immediately, packages sent by express to men in the armed forces who have been transferred, will now be reshipped to them in this country at no extra cost, according to a statement by L. O. Head, president of the Railway Express Agency.

Reinhold Publishing Corp., New York, announce that their third and latest addition of "The Condensed Chemical Dictionary," especially designed for wartime needs, is now available. The dictionary contains complete descriptions of thousands of chemicals, raw materials and manufacturing processes, including packaging and grades, plastics, metals and alloys, synthetic fibres, etc.

A new 28-page book, entitled "The Value and Patriotic Use of Full Color," has just been issued by the Stecher-Traung Lithograph Corp. The book is beautifully lithographed in color and demonstrates, among other things, how the buyer of advertising material can enjoy the many advantages of full color and still conserve critical pigments used in some inks.

"Handbook of Display Materials" is the title of Sherman Paper Products Corp.'s new sample book. Attached to the back cover is a booklet illustrating effective uses of Sherman papers in eye-catching displays.

**Correction:** Credit should have gone to Lightfoot Schultz Co. as the makers of the soap sculptures of the polar bears on a toboggan and the football between the goal posts which appeared in the story on gift packaging on page 46 of the June issue.

# REPELALL PROTECTIVE PAPER

## For the PACKAGING OF PERISHABLE PRODUCTS

REPELALL papers are made in grades suitable for the packaging of

War Materials, Ordnance Greaseproof,  
Dehydrated Foods, Drugs, and many  
other Essential Products.

This Coating can be applied to various types of paper and paperboard to provide the following protective qualities:—

- Moisture-Vapor Resistant
- Grease Resistant
- Waterproof
- Non-Toxic
- Heat-Sealing
- PH Rating

We should be glad to work with you on the Protective Packaging of your Products. No obligation, of course!

HAZEN PAPER COMPANY  
HOLYOKE, MASSACHUSETTS

Printed on Repelall No. MCB-55-10

(Note: The grade shown here may be one that is not suitable for your needs. However, we do have other grades or we would be glad to make one for your particular requirements.)

# REFLEX

## PROTECTIVE PAPER

### PACKAGING OF REMOVABLE PRODUCTS

Reflex is a new and improved type of protective paper for removable products. It is made of a special material which is resistant to heat, moisture, and chemicals.

It is used to protect removable products from damage during storage and handling. It is also used to protect removable products from damage during transport.

The Reflex paper is made of a special material which is resistant to heat, moisture, and chemicals. It is used to protect removable products from damage during storage and handling.

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### WAXEN PAPER COMPANY

#### PROTECTIVE PAPER

Waxen Paper Company is a leading manufacturer of protective paper for removable products. We have a long history of providing high quality products to our customers.



## Picture the product

(Continued from page 61) glasses at the customer while she puts away in her purse the money saved by buying "Gauze tissue." All these point up the saving to the customer through purchasing the company's products.

Incorporated into each illustration are one or more pictures of the package. The displays are also all done in full color with the packages reproduced as accurately and prominently as possible without taking away from the display as a whole.

Display material using the same designs was made up for window posters, wire pennants and core cards for counter use. The window posters have a white space at the right in order for the dealer to insert his sale price. These posters were made up in two sizes—one to be used in the window and another twice as large to be folded at the top so that the posters could be hung over a wire and the illustrations seen on both sides. A series of nine wire pennants gives the storekeeper an opportunity to show the displays in a number of different ways in the store.

Another package reminder which has proved very effective is the core card. One of these little cards is inserted in a roll of tissue and placed on the counter. Provision is made on the card for the dealer to insert his sale price. The core cards are made up in a complete series which, of course, repeat the illustrations of the window poster and the wire pennants. Since the core cards are designed to use an actual package as part of the display, their value is especially high.

*Credit: Posters, pennants and core cards by The U. S. Printing & Lithograph Co.*

## "Victory victuals"

(Continued from page 45) the present moment, the development of paperboard packages to replace tin cans is along two main lines—one, the bag in carton type of package, and the other, the wax dipped container.

"We like to consider the bag-in-carton as a perfectly natural combination and as an obvious solution to this problem. For example, many of the organs in the human body are exceedingly efficient though very delicate. They are, however, adequately protected by the skeleton, and in exactly the same way it is possible to produce a physically delicate but hermetically sealed inner bag protected by a strong outer carton. This inner bag would be almost ideal if made of rubber derivatives, but unfortunately these are no longer available. The manufacturers of transparent cellulose have now succeeded in developing films made of relatively non-critical materials which are not only heat sealable, but are also proof against grease, water, moisture vapor and the passage of air. Thus they serve to meet nearly all packaging requirements with the possible exception of foods that have to be processed or pasteurized."

"Fortunately there are a number of companies equipped to manufacture these heat-sealable bags and there are also a number of satisfactory heat-sealing machines on the market. In addition to that, the government is very liberal in granting priorities for the purchase of such equipment when the package is to replace tin for essential civilian products. In addition to this plain bag-in-carton, there are several patented packages involving heat-sealed inner liners, the development of which is being rapidly accelerated.

"The other method of making an air- and water-tight



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transparent drinking straws made of—

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Signed John Doe                      Signed Alfred G. Lee  
Salesman's Signature                      General Manager

Make checks payable to

## MODERN PACKAGING

Chanin Building, 122 E. 42nd St., New York, N. Y.

paperboard package is to dip the final sealed-up container in molten wax. Ordinary paraffin will not suffice, however, as its brittleness may allow rough handling to develop leaks. Fortunately, there have been developed recently wax blends which not only are relatively flexible when cold, but also have the property of deep penetration into the board and of quick cooling, which latter property insures the sealing up of corner openings or pinholes when the package is withdrawn from the wax bath. Of course, during peacetimes we were familiar with this idea of dipping in wax, but its relatively high cost prevented any development in this field. But undoubtedly the large volume of these packages that will be produced before the war is over will lead to lower costs.

"Unfortunately it is impossible to exhibit many such packages today. This is partly due to the fact that they are still in the development stage and not yet on the market, and partly to the fact that most of the users of tin cans still have several weeks' or months' supply of empty tins on hand. Nevertheless, it is quite probable that many of these packers are liable to be faced with a tin shortage much sooner than they now expect so that it is none too early for them to be perfecting new methods of packaging."

## Food technologists

(Continued from page 58) Roger H. Lueck, research director of American Can Co., reported that the nation had its biggest tin stockpile in history at the end of 1941—an estimated 115,700 long tons. To this would be added, he said, about 90,000 tons from Bolivian ores smelted in Texas, 10,000 tons from can makers' scrap and 10,000 tons from recovered used cans. He estimated that at the worst the country will get along with 45,000 tons of primary tin and detinners recovery per year for the next five years. This means that canners must manage with an average consumption of 17,500 tons of tin in contrast to a consumption of 39,000 tons in 1940.

Use of bonderized steel in can manufacturing was cited as the ultimate in tin conservation, but it has serious limitations. Bonderized steel does not prevent rust, although it will retard the rate of rusting. Electrolytic tinplate is coming into use because it cuts the amount of tin used in hot dipping 90 per cent. It is better prevention against corrosion than bonderized steel, but is inferior to hot dipped tin.

Solder was 40 per cent tin, 60 per cent lead alloy until tin content was cut recently to 30 per cent, and will go lower. A solder of 2½ per cent silver and the rest lead has been made, but cannot be used in soldering bonderized steel because it won't alloy with steel.

Rubber for gasketing compounds is being reduced to 50 per cent and eventually may not be used for this purpose.

Wide search has been made to discover a workable substitute for tinplate to package dehydrated vegetables. Lacquered black iron looks hopeful, but so far a container has not been made that is gas-tight at the end seams.

H. A. Barnsby of Owens-Illinois Glass Co. described the efforts of the glass industry in meeting the needs of wartime economy. Bottles and jars have been reduced in weight so that they require from 35 to 52 per cent less glass. During the current year the number of styles of containers for liquor will be reduced from 1,500 to four; for foods, from 1,500 to 75. Considerable jamming and bumping of containers has been eliminated on high-speed production lines by improved methods of automatic handling of glass packaging.

## Testing paper

(Continued from page 56)

### Test Conditions

13. All test specimens shall be brought to a standard condition prior to testing and all tests shall be made under standard atmospheric conditions.<sup>5</sup>

### Procedure

14. Place the oscillating folding head in the position of zero fold. Place on top of the plunger a weight equivalent to the tension desired on the specimen and clamp the plunger in position when depressed under this load. Then clamp the specimen firmly and squarely in the jaws with the surface of the specimen lying wholly within one plane and not touching the jaw mounting-plate. Handle the specimen by the ends and do not touch it with the hands in the region which is to be folded. Then apply the prescribed tension to the specimen by releasing the plunger. If the reading of the load indicator has changed, reset it by means of the adjusting screw to agree with the reading obtained when the weight was applied. Whenever possible a tension of 1.0 kg. shall be used, but if this does not afford practical test results, a greater or a lesser tension may be used. Fold the strip at a uniform rate of 175 double folds 15 per cent per minute until it is severed at the crease. Record the number of double folds required to sever the specimen.

### Report

15. The number of double folds required to sever the specimen shall be reported as the M.I.T. Folding Endurance (double folds) *at the tension used*, and shall include the number of tests, and the average, maximum, and minimum number of folds for each for the principal directions of the paper. Specimens tested with their length cut in the machine direction shall be designated as "machine direction." Specimens tested with their length cut at right angles to the machine direction shall be designated as "cross machine direction." In reporting average results all digits after the first two shall be rounded off to zero.

## March of machines

(Continued from page 68) a strangle-hold determination on the part of some present Washingtonites to perpetuate themselves in power. This must be met, he said, by making manifest the benefits of independent business to the consumers of branded and packaged merchandise.

Packaging has a bright future, said these machinery manufacturers—and they are staking their future existence on that premise! The consuming public today will submit willingly to necessary standardization and simplification, and the package user is making the best of the situation. After the war is over, the soldiers will get out of uniform and the packages will resume individuality. Competition will furnish a powerful urge. Materials will be plentiful and unrestricted, and the public will reassert its healthy desire for novelty and beauty. Today, when the package machinery man bases his recommendations on economy, simplicity and serviceability, he is listened to with respect. The day will return when the package buyer will say, "That's out of date now! I want the best and the most beautiful thing you've got." The public will second the demand, for the American desire for the finest things in life will never be satisfied.

## There are plenty of **BAGS**

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FOR EVERY PURPOSE  
WE MAKE THEM ALL

Bags can do practically any packaging job. We make bags that safeguard dehydrated foods, contain ice-cream and other products . . . coated bags, waxed-paper bags, laminated bags, double-walled bags, etc., etc.

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After sixty years of close contact with paper converters throughout the world, we now find ourselves engaged in an all-out production of essential equipment for the war program.

The army and the navy now have first call on our men and machines and we are unable to accept orders for machines, or parts used in our machines now operating unless the War Production Board deems the same necessary for promoting the war effort.

We want to keep in touch with all of you. We want to help you keep up the flow of essentials from mills and converting plants. If we can advise you, do not hesitate to call on us. If you need machines or parts which the War Board will pass favorably upon, we will try to serve you. We wish, however, to advise that army and navy requirements will come first until no longer needed.

**HUDSON-SHARP**  
MACHINE CO. • GREEN BAY • WIS

★

★



## Britain—total war

(Continued from page 41) Boards can be made from straw and by its addition large quantities of wastepaper can be used in the making of better quality papers than would otherwise be obtainable from waste.

However, paper supplies for packaging are severely restricted, no matter what progress is made in the field of substitutes. Every scrap of paper that can be spared is given to munitions rather than to packaging. There is no way out of the rigid economy that has to be faced. One popular economizing method now is the adoption of the principle of re-use. Re-usable collapsible containers appear to be available in fairly large quantities. One make, a product of the Colville Trust Co., Ltd., can be assembled in 25 seconds—the assembly, packing and sealing being done in one operation. Signode strapping is used to make the containers tamper-proof and the sides interlock. The box can be used over and over again and with normal handling should be capable of being used up to 12 times. All components are interchangeable and may be replaced at low cost so that cost per journey is quite low. In the envelope field a Manchester firm has patented an Envoflap which eliminates the necessity for using envelopes at all. The flap is a slit of paper three inches long and an inch and a half wide, gummed on one side. On the plain side are printed the words, "Save envelopes—save paper—help the war effort." Half of the flap is stuck to one of the sides of the sheet of note paper on which the letter is written. The letter is then folded three times and the other half of the flap is folded over. When stuck down, it seals the letter, leaving part of the back of the sheet for the address. Many of our leading firms, including Rolls Royce, Elizabeth Arden, Batchelor's Peas, C. and A. Modes, Ovaltine, Milton's and Genasprin, have adopted the pack.

### Research in paper

In the paper field, interest attaches to a memorandum issued by the Printing and Allied Trades Research Assn., which is setting up a research committee to work out a "scientific programme" for developing the use of paper products in packaging. The committee will attempt to establish (a) what are the desired properties of either the raw or assembled materials—paper, board, adhesives, etc.—necessary to give protection against atmospheric and similar conditions and (b) the relation between the make-up of the package and its performance under conditions of use. An annual amount of £2,000 will be spent on the work, made up of contributions by individual firms and a grant from the government of about £600. The items for research include: (1) to study the penetration of (a) paper and board, (b) cellulose film, (c) rubber derived film, (d) plastic films, etc., by (a) moisture vapour, (b) liquids of various kinds—air, oxygen, carbon dioxide, etc., (d) gases of various kinds, water, oils, fats, etc., (e) heat, (f) light of various wave lengths, and (2) to study the effect of impregnation and coating on the items mentioned above.

The committee will also attempt to establish factors controlling and preventing mould and bacterial growth both outside and inside packages and experiments are proposed in regard to relationships between design and strength against impact and crushing forces. The committee also hopes to devise tests for adhesives used on package-making machines, to investigate methods and mechanism of heat sealing and to study the efficiency of various types of closures for (a) security, (b) sifting and to study the effect of (a) moisture con-

tent of board, (b) material, (c) direction of cutting and scoring, (d) shape of cutting or scoring tool on the type and efficiency of operation in cutting and creasing.

### Rubber, glass, labels

Since the Pacific events, rubber is strictly controlled. However, the manufacture of rubber rings and gaskets for sealing food containers is permitted. Glass is available enough for all necessary packaging needs, although here again economy is the keynote. Maconochie Bros., makers of Pan-Yan and Kep sauces, feature in their advertising an appeal for the return of empty bottles to retailers.

An interesting decision of the Customs and Excises Dept. is that all labels, tags, gummed tickets, etc., are now liable to purchase tax with the exception of brand labels, brand tags, brand seals, brand tickets. Labels and tickets, etc., are to be attached by a manufacturer or merchant to his goods solely for the purpose of indicating the grade, type, contents or analysis, or as instruction labels or adhesive labels for attachment to correspondence or goods solely for advertising.

## Sugar—small cartons

(Continued from page 72) form the crystals evenly in compact space. An inch deep layer of X Liquor is then let in to cover the sugar masses, after which the molding machine is sealed at the top.

Hot air induced inside the mold at a pressure of 30 lbs. effectively cements the sugar crystals, producing a solid mass of even grain, capable of being sawed and chipped to form small tablets. The last two operations are performed mechanically in a single production line.

After the hot air has been allowed to remain in the mold about 30 minutes, to dry thoroughly the sugar masses, the slabs are placed on a chain conveyor for routing through the chipping machine. As each slab moves on the conveyor six rotating saws reduce it to that many slices. Continuing on the conveyor these are cut by ratchet knives to form even-sized tablets, which automatically slide into large containers.

Before being placed on the packaging line, tablets undergo minute inspection to eliminate broken and otherwise defective tablets. The operator places the tablets on a single-file chain conveyor for feeding to the individual wrapping machine. At the end of the line the individually wrapped tablets are assembled for the final packaging operation.

In this operation, which calls for packing 500 tablets to the carton, the operative first assembles the correct quantity of individually wrapped tablets on a specially improvised form of exactly the same size and capacity as the carton. She then simply places the open container over the form and transfers the entire mass of tablets and the carton is sealed.

This is one of many packaging operations, others being specialized for granulated and powdered sugar and calling for a variety of package types and sizes, sacks and paper bags as well as the carton. The Western Sugar Refinery is now introducing specialized equipment for handling paper bag packs, an operation which is intended for granulated sugar. For the variety of cubes and tablets, the refinery specializes in cartons of distinctive shapes and attractive appearance.

*Credit: Equipment for packaging granulated sugar, Pneumatic Scale Corp., Ltd. Tablet wrapping machine, Package Machinery Co. Labelers, Standard-Knapp Corp. Package weighing machine, Parsons Automatic Scale Co. Bag filling machine, Bates Valve Bag Division of the St. Regis Paper Co.*



# Here's the TRUTH about SET-UP PAPER BOXES

There are ample supplies for manufacturing set-up boxes. These include the new coated and laminated boards that offer protection against moisture, grease, oil, etc.

We manufacture set-up boxes automatically, with all the advantages of this type of production. Our designing staff can present

new packaging ideas. We produce in quantity at high speed. Costs are economical. Production is standard—the first box is as fine as the millionth. The set-up box, as we make it, offers the ideal replacement for your non-available package. We can show you how our boxes will meet your requirements.



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## You need NEW ADHESIVES *for your* SUBSTITUTE MATERIALS

Union Paste has developed a number of new adhesive formulas to perform new gluing jobs with the substitute materials packagers are now using or planning to use.

We have developed these formulas in available adhesive materials, replacing essential chemicals with those not vital to the war effort.

Our laboratory facilities are always open to packagers who are converting their efforts in line with Victory production. We have developed special adhesives for such purposes and will be glad to work with you on your problem.



Established 1866

## Union Paste Company

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## Let the War Reduce Your Force to a Skeleton

SO WHAT?



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will release hands for other work, because thru its great simplicity, it needs very little of the operators' attention, once it is set. Especially when equipped with **ELECTRIC EYE CONTROL** are you freed from human element in your sheeting work. Amazing degrees of accuracy in "spot sheeting" work, plus profitably increased outputs. The need for doing your own sheeting is probably more acute now than ever before in your business history, and this because of present conditions.

**CHARLES BECK MACHINE CO.**

13th & Callowhill Streets

Philadelphia, Pa.

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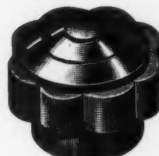
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PACKAGERS of hundreds of peacetime products from penny candies to costly perfumes can tell you that packages of Vuepak are tough and sturdy as well as smartly sleek and transparent.

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When air raid sirens screamed in England, work stopped at machines set near windows—for concussion from even a distant bomb would fill the air with deadly slivers of glass.

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with the United States Navy, developed the window pane you see above of standard, sixteen-mesh wire screen laminated with transparent cellulose acetate sheets (Vuepak).

Clear and transparent as a screened window of glass, the new material can be easily installed in any conventional, multi-paned steel or wood sash. But this is the important fact: Tested under vacuum shock conditions, it stood up without appreciable damage under a 28-inch vacuum while clear glass shattered at 15 inches of vacuum and heavy, wire-reinforced glass at 26!

★ ★ ★

That same combination of clear transparency with toughness and rigidity has won Vuepak many an important assignment in the war effort—from gas mask eye-pieces to gas-proof first aid kits. So actually it isn't such a far cry as it might seem from helping to win sales for candy or perfume to helping win a war. MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts.



## CASE STUDY: DUREZ Plastics in War Packaging



*Molded of Durez for the Field Manufacturing Company by J. F. Butterfield, Inc.*

THINK of a navy base hospital in Iceland . . . an army post in Australia . . . an air field in Africa. In these extremes of distance and temperature, you begin to see in true perspective some of the problems in packaging such elementary medical equipment as thermometers and syringes.

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# DUREZ PLASTICS & CHEMICALS, INC.

PLASTICS THAT FIT THE JOB



## QUALITY

Excellence of product is a basic SHELLMAR policy and has been since the beginning of our business. Today this policy means more than ever before. SHELLMAR package engineers are working around the clock in producing packaging materials which do the vital job of protecting food and other essential goods efficiently.

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